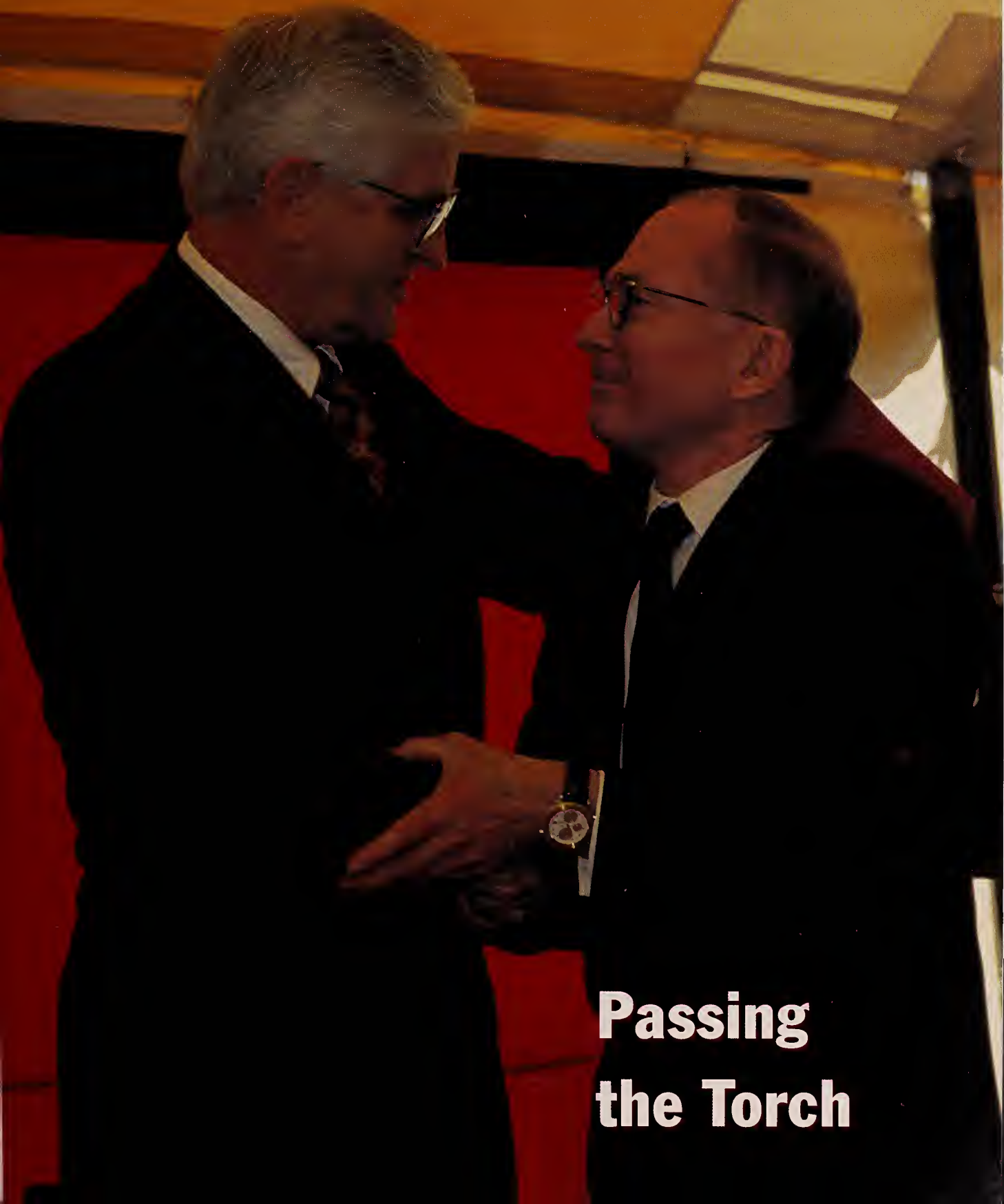


Harvard Medical

ALUMNI BULLETIN

AUTUMN 1997



**Passing
the Torch**

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1998–1999

Fellowships are available for a year of post-graduate study. The amounts awarded for stipends are determined by the specific needs of the individual.

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The Committee on Alumni/ae Fellowships gives preference to those Harvard Medical School graduates who have:

1

demonstrated their ability to make original and meritorious contributions to knowledge,

2

planned an innovative program of study which in the Committee's opinion will contribute significantly to their development as teachers and scholars,

3

clearly planned to devote themselves to careers in academic medicine and the medical sciences.

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Support for research in the U.S. or abroad; not restricted to alumni. Directed to M.D. scientists who require further training.

Deadline

Although there is no specific due date, the Committee requests that applications for either fellowship be submitted not more than one year in advance of the requested beginning date. The Committee meets once a year in January to review all applications on file by December 31.

Information and application forms may be obtained from:

Committee on Alumni/ae Fellowships
c/o Sponsored Programs Administration
Harvard Medical School
Goldenson Building, Suite 148
220 Longwood Avenue
Boston, Massachusetts 02115
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Harvard Medical

A L U M N I B U L L E T I N



Passing the torch to the new dean.

Photo by Ilene Perlman

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Joseph Martin is only the sixth dean of Harvard Medical School since World War I. Many living alumni can remember the first of this line, David Linn Edsall (1918-1945), who set the tone for Harvard Medical School in this century and probably the next. Edsall also set a dauntingly high standard. He firmly led a sometimes provincial and self-satisfied Boston Brahmin community of physicians tardily out of the nineteenth century and into a position of leadership in modern scientific medicine. He did so without in any way sacrificing his or the school's ideal of humane medical care.

Four of Edsall's successors, C. Sidney Burwell, George Packer Berry, Robert Ebert and Daniel Tosteson, spacing themselves at intervals of nearly a generation each, all continued to embody, preach, and practice the central dogma of medicine as a science. None, on that account, was narrow in his view of medicine as a human art or social practice. None seemed to feel bound by a particular way of doing things; yet none seemed to tinker for tinkering's sake.

Although I met Dean Burwell in the last year of his life and Dean Berry in the last of his administration, I cannot claim to have much personal sense of either man. Their successors, Deans Ebert and Tosteson, I came to know somewhat better—based on two serious conversations with the former and one with the latter. I am, to this day, aware of an utterly remarkable trait in both of them: the sheer ability to think seriously about another person. (This is not a universal or even a common trait among administrators.) My memory of these exchanges is vivid; my life is different and, I believe, better because of them.

It is an admirable feature of any institution or community that it can not only attract but tolerate leaders who are so consistently and so variously excellent. This is solid ground for optimism as HMS enters an epoch that will be much less favorable to its ethos than was the twentieth century.

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Adelstein Named First Tosteson Professor

S. James Adelstein '53 has been named the first Daniel C. Tosteson University Professor, a fitting honor for both men who have worked so closely together the past 20 years. Adelstein, a specialist in nuclear medicine and the Paul C. Cabot Professor of Medical Biophysics, served in Tosteson's close circle as the executive dean for academic programs, a position from which he has retired.

In announcing the appointment, Harvard University President Neil Rudenstine commented: "Jim Adelstein has served Harvard for more than 35 years as a distinguished faculty member, an outstanding scientist and physician, and a widely admired colleague and mentor. He has made major, enduring contributions to the advancement of knowledge in nuclear medicine and radiobiology, and he has played a leading role in developing and

implementing the medical school's New Pathway curriculum. It's a pleasure to recognize Jim's many contributions to the university with a chair named for Dan Tosteson, whose leadership over two decades has done so much to advance medical education and research."

Adelstein's area of research interest has been the development of carrier molecules and radioactive tags that localize disease sites in the body and emit radioactivity that can kill cancer cells.

University professorships are a special category of endowed chairs, Harvard's highest professorial distinction, designed to give free rein to scholars "working on the frontiers of knowledge. . . who go beyond the conventional limits of departments and specialties."

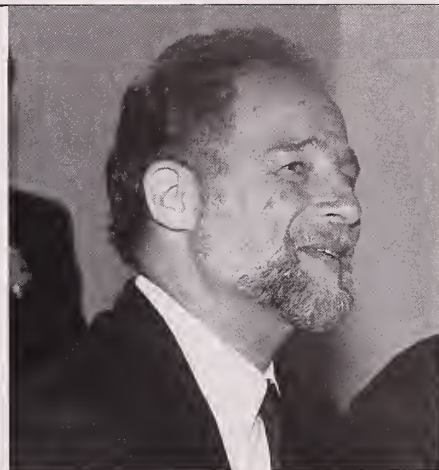


photo by Steve Gilbert

New Chair in Cancer Research Filled

Thomas L. Benjamin, PhD, professor of pathology, is the first recipient of the Virginia and D.K. Ludwig Professorship for Cancer Research and Teaching. Benjamin, who joined the HMS faculty in 1973, is known for his research on the tumor virus polyoma.

The Virginia and D.K. Ludwig Fund for Cancer Research endowed the chair to advance research in cancer and other neoplastic diseases. Said Dean Daniel Tosteson '49 at the reception honoring Benjamin: "Mr. Ludwig was an extraordinary philanthropist during his lifetime. His understanding of the importance of medical research has made available invaluable support that will positively affect the health and well being of people everywhere."

James Adelstein and Daniel Tosteson



photo by Sue Owrutsky

New Institute to Link Biology, Chemistry and Medicine

Harvard has established a new institute that will incorporate emerging technologies into new approaches to studying the function of proteins. The goal is to leapfrog ahead into a "post-sequencing age," when all genes will have been read and when attention will turn to figuring out how the proteins made from those genes actually function in the human body.

The Harvard Institute for Chemistry and Cell Biology, a collaboration between the Faculty of Arts and Sciences and the medical school, will be located in the HMS Seeley Mudd building. Researchers from the fields of combinatorial chemistry, functional genomics, smart biological assays, and nanotechnology will together work to develop fast, efficient chemical probes called ligands. Ligands can bind to proteins and block or amplify their function, serving as powerful tools to

illuminate complex biological processes. This will provide leads for new drug developments.

The institute will be co-directed by Stuart Schreiber, professor of chemistry in the Department of Chemistry and Chemical Biology, and Tim Mitchison, who will leave the University of California/San Francisco, to become HMS professor of cell biology. Both Mitchison and Schreiber are known for their ingenious use of chemistry to study cellular function.

"I think what we have put together with Stuart and Tim is unique. I am very, very excited about it" says Marc Kirschner, chairman of the HMS Department of Cell Biology, who together with Schreiber, worked out the idea for the institute. "Ten years from now, this combination of expertise may become commonplace, but the chances today of achieving this kind of complementarity anywhere else are very small."

Fixing Birth Defects with Fetal Tissue

Researchers have achieved the first successful repair, in a newborn lamb, of congenital anomalies by removing live tissue from the fetus, engineering replacement tissue, and implanting it.

Dario Fauza, a fellow at Harvard Medical School's Center for Minimally Invasive Surgery and Children's Hospital, reported his preliminary success at a pediatric association meeting in July. He removed tiny bits of bladder from five sheep fetuses in utero, grew the tissue in the laboratory while the pregnancy continued, seeded it onto a synthetic scaffold for tissue assembly, and then implanted it back into the newborn lambs, in which he had earlier created defects like those seen in humans. In May he had reported similar success with skin tissue.

"This is the first time someone engineered tissue from a fetus and used that tissue to treat the newborn,"



Left to right, Matthew Shair, Tim Mitchison, Marc Kirschner, Rebecca Ward, Gregory Verdine and Stu Schreiber

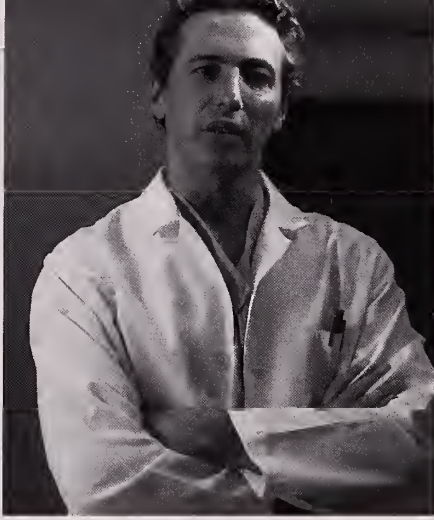


photo by Graham G. Ramsay

says Fauza, who worked with Anthony Atala, HMS assistant professor of surgery.

Shortage of suitable tissue is the most pressing problem in trying to repair birth defects in babies. They are too small to borrow skin from, as is done with older patients. "This work is an important conceptual innovation, and the results are really very exciting," comments Joseph Vacanti, HMS professor of surgery at Children's, who wasn't involved in this study but who is a pioneer in tissue engineering. Surgeons dream of having sufficient tissue to repair a deformity right after a baby is born, he said.

Human trials—some headed by Atala—that are testing engineered skin and urogenital tissue on adult patients are already in place or beginning soon. Fauza hopes that his approach may reach human trials in infants within five years.

But there are major hurdles. He must first show that the engineered tissues grow and function long past the two postnatal months studied so far. Fetal surgery, which is necessary to remove the small piece of tissue, is another hurdle. It is in its infancy and can cause such complications as preterm labor. Minimally invasive surgery—in which surgeons insert a camera lens and scissors through tiny incisions in the uterus to operate on the fetus—can reduce, but not yet eliminate, such risks.

Women's Health Initiative

A major national health study, the Women's Health Initiative, is the first clinical trial of its size to address postmenopausal women's health issues. This randomized clinical study, which involves 164,500 women across the United States, will examine the impact a low-fat diet can have on reducing the risk of breast or colorectal cancer; how hormone replacement therapy affects the risk of breast cancer, heart disease, Alzheimer's disease and osteoporosis; and whether calcium and vitamin D supplements decrease the incidence of hip fracture and colorectal cancer.

"This landmark study addresses the major public health issues that concern postmenopausal women," says JoAnn Manson, HMS and HSPH associate professor and principal investigator of the initiative at Brigham and Women's Hospital, one of 16 Vanguard Centers for the Women's Health Initiative. "The women who volunteer for this study are trailblazers who are helping women of all future generations."

BWH is actively recruiting women over age 55 who are interested in participating. Women must be between age 55 and 79, past menopause, and planning to stay in the Boston area for at least three years. The national number for recruitment is 1-800-54-WOMEN and locally, 617-278-0782. Recruitment will continue through January 31, 1998.



WOMEN'S HEALTH INITIATIVE

President's Report

by Suzanne W. Fletcher

The spring meeting of the Alumni Council coincided with alumni week, which celebrated passing the torch from Dean Tosteson to Dean Martin. The council's session began with a dinner meeting with Dean Martin, the class agents and Tenley Albright '61, chair of the Harvard Medical Alumni Fund. It was a chance to review for Dr. Martin (and ourselves) the history of the Alumni Council, as recorded in Nora Necessian's account, *In Celebration of Life: A Centennial Account of the Harvard Medical Alumni Association, 1891 to 1991*. The aims, laid out in the original constitution, were "to advance the cause of medical education, to promote the interest and increase the usefulness of the Harvard Medical School, and to promote acquaintance and good fellowship among members of the Association." Officers included a president, ten (!) vice presidents, a secretary and a treasurer. Dues were a dollar a year.

Over the years, major activities of the council included raising money, especially for Quadrangle buildings in the early 1900s, which cost \$5 million, and for building Vanderbilt Hall, which the council sponsored; holding lectures, including one by President Eliot in 1902 entitled, "Relation of the Physician to the Community," a title with a remarkably modern ring; funding student scholarships and alumni instructorships and assistantships; operating an alumni employment bureau from 1912 to World War II (do we need this again?); and conducting periodic surveys of alumni.

This year, besides learning about and advising on the many school issues brought to the council by Deans Tosteson and Federman, the council deliberated on the qualities we thought were needed in the dean and conveyed our deliberations to President Rudenstine during the search process

(judging by the result, we think he heeded our advice). We set up a new Alumni Award for Excellence in Mentorship to honor an outstanding HMS faculty member for his or her mentoring of medical students, residents, fellows or junior faculty (the first awardee was Ronald Arky, Charles S. Davidson Professor of Medicine and master of the Peabody Society), and we appointed a committee, chaired by David Marcello '56, to organize a program whereby alumni in the Boston area can sign up patients to help young medical students learn physical findings. As far as I can tell, this is the first time in its 106-year history that the Alumni Council has considered ways to help the medical school find patients.

The council also considered the difficult issue of rare suicides among young alumni and students, examining ways to increase help for stressed students and to prevent stress in the first place. Finally, the council discussed the growing competition among health care organizations in Boston and considered what the school might do to foster collegiality.

This is my final report as president. Thanks to all of you who have communicated with me and who have responded so positively to my requests for help. The gavel is now in the capable hands of Bob Lawrence '64, whom I first met when I was a fourth-year student on the medical service at MGH and he was the resident. The bonds created by such experiences are what makes the Harvard Medical Alumni Association special to us all.

Suzanne W. Fletcher '66 is HMS professor of ambulatory care and prevention at Harvard Pilgrim Health Care.

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Benchmarks

Living Longer and Better

When Thomas Perls addressed visiting alumni during alumni week's Faculty Scientific Symposium on rehabilitation and geriatrics, he first reached out to the oldest members of the audience. But graciousness only partly accounted for this special welcome to the Class of 1937, the HMS instructor in medicine readily acknowledged. As director of the New England Centenarian Study, Perls is especially curious about the oldest old.

Perls said that nonagenarians and centenarians now are the fastest-growing segment of the U.S. population, causing "a silent revolution in society that will change how we look at each other, how we look at ourselves ... that will, indeed, reorganize the very fabric of our society."

When the Harvard Medical Alumni Association was founded in 1891, the average American could expect to live about 40 years. The population's age structure was the shape of a triangle, with few people living into their 70s. By the year 2020, however, the number of Americans over 65 will equal the number of people under 20, effectively turning the triangle into a rectangle. The ranks of the nonagenarians and centenarians will swell from today's 30,000 to at least 500,000 in the year 2020, said Perls.

Societal implications of these demographics are already reverberating through public debates. Much of the talk about projected Medicare insolvency, the financing of social security, and health-care rationing is pitting the young against the old by invoking fears that the old will require ever-growing resources.

"Is the rising life expectancy going to be a horrible storm that we must all hunker down for? To answer this I think we must start studying the oldest old," said Perls. In fact, his work so far

shows that this tension may be unnecessary, as the oldest old may never become a massive drain on society. His work with Boston-area centenarians shows that they are surprisingly vigorous and healthy. When they do enter the hospital, he reported last year, they cost far less than do hospitalized patients in their 60s and 70s.

One explanation for this lies in a newly emerging paradigm for aging that defies conventional wisdom, said Perls. The general assumption that people get progressively weaker with age and inevitably end up bedridden and demented does not hold true for the oldest old. Rather, a third of the centenarians Perls studies are completely cognitively intact, physically healthy and active. All of them were in excellent health and most were living independently into their mid-90s.

Perls explained this encouraging news as "survival of the fittest," saying that the 60s and 70s are a vulnerable period in a person's life, during which fatal diseases are most likely to strike. But "if you are in your 80s and healthy, you have demonstrated your survival prowess, and it becomes more and more likely that you will live the next 10 or 20 years in good health. You have gotten over the hump."

Gabrielle Strobel

A Rogues' Gallery of Disease

The world was a very different place when the HMS Class of 1972 donned their caps and gowns and graduated. Women were few and far between in the commencement parade. Virtually no one gave a thought to health maintenance organizations. Human retroviral diseases were practically unheard of.

"Who could have known then the enormous impact these changes would have," said Peter Weller '72 and HMS professor of medicine. He was introducing the class symposium held on June 5, during which alumni from the Class of 1972 discussed strides made in tackling not only new threats, such as HIV, but also long-standing medical problems.

One long-standing problem addressed by the first speaker, Onesmo Ole MoiYoi '72, was that of malaria. MoiYoi, who is provost of Kenyatta University and senior scientist and founder of the International Institute of Molecular and Cell Biology in Kenya, showed how his research on the molecular biology of theileriasis, a leukemia-like disease that affects cattle, could shed light on the mechanisms of malaria. MoiYoi's research has shown that the parasite causing theileriasis acts by secreting a novel enzyme as well as by inducing certain substances in host cells of cattle. "There may be a mechanism in common between malaria and theileriasis," MoiYoi said, adding that knowledge of such mechanisms may lead to new vaccine strategies.

Identifying disease mechanisms with the aim of thwarting them was the focus of the next speaker, Matija Peterlin '72. Peterlin, who is professor of medicine, microbiology and immunology at the University of California, San Francisco, has recently discovered that one way HIV turns

Benchmarks

human immune cells into HIV-producing factories is by secreting a protein that converts the immune cells' RNA polymerase from a nonprocessive to a processive form. "The virus has been very clever. It has captured a central mechanism in the host cell," Peterlin said, adding that he and his colleagues are developing peptides that block the conversion of RNA polymerase.

Although less well known than HIV, rotavirus currently accounts for one-third of the diarrhea cases worldwide, and kills hundreds of thousands every year—mostly children in developing countries. Roger Glass '72 recounted how he joined the CDC in 1985 with the aim of drawing attention to rotavirus. "I wanted to make it into an American disease," said Glass, who is currently chief of the Viral Gastroenteritis Unit at the CDC in Atlanta. He found that 125 American deaths per year were caused by rotavirus, though the number has since dropped to 20. New vaccines for rotavirus are being developed. "Our hope is that hospitalization figures for the United States will go away completely with the use of this vaccine."

Misia Landau

Book Mark

MOUNT MISERY

by Samuel Shem

Ballantine Books, New York, 1997

by Nancy Rappaport

Samuel Shem's novel *Mount Misery* is a diatribe about the way psychiatric training—while claiming to create a competent talking doctor who can diagnose with precision and prescribe with confidence—strips the trainee of dignity, humanity and capacity to heal. Roy Basch, a psychiatry resident (the main character of *The House of God*), finds himself transported from one chaotic experience to another: he spends a few months on the "borderline" floor where his callous supervisors torture patients by pathologizing them and restricting their privileges with no sign of reprieve; he is bombarded by Dr. Seuss-like flamboyant psychopharmacologists so dedicated to self promotion that they rope patients into disastrous experimental protocols. If this is not dizzying enough, nights on call in this make-believe psycho hospital have enough drama for an ER episode. Patients are slicing and dicing while our hero assiduously sews up the cuts and stems the flow of madness.

The novel is a commentary on the desolation of the psychiatric field, where in-depth knowledge is replaced with reductionist paradigms. Throughout the book there is a tug of war between exemplary and evil influences, being available to a patient and being dismissive, listening with a question and forcing what one hears into preformulated interpretation. Fortunately in this story, good wins out both personally and professionally. After sleeping around and surviving three or four of his patients' suicides, Basch manages to reclaim his primary relationship and makes a commitment to raise a child. He orchestrates a mini

revolution against a pernicious supervisor who is sleeping with patients and supervisees. He also mobilizes the residents and patients to take on the immorality of the entire system.

Shem also unveils the "macho" nature of psychiatry, which is changing but still permeates the field. There are multiple casualties in *Mount Misery* as naive psychiatry residents become unglued by the pressure of the daily grind, as they witness the demise of patients and the dismissiveness of their supervisors. I remember my own apprehension and horror when during my training, staff informed me that another psychiatrist had completed eleven consultations the day before she killed herself. To them, this was an acknowledgement of her dedication. To me, this was a sad testament to her desperate need for approval.

Shem is accurate in describing the protective function of interpretation for psychiatrists. When Basch is floundering as he tries to deal with the despair of his patients, he anchors himself with a glib label or interpretation even at the expense of alienating his patients. In a therapy session with Basch, a frightened patient is describing his angst about not having any intimacy with his wife. The patient is furious that his wife's analyst is probably sleeping with her. As is typical with an abuse of power such as this, he is bewildered as to how to proceed. Basch complacently interprets that the patient is probably impotent because of his overbearing relationship with his mother—a classic fallback position—when all else fails, blame the mother. But in Basch's rush to interpret he has overlooked the sordid reality that his patient's despair is directly linked to a boundary violation.

When we interpret, there is the risk of humiliating our patients by reducing the complexity of human experi-

SAMUEL SHEM

Bestselling author of
THE HOUSE OF GOD



MOUNT MISERY

A NOVEL

ence to bumper sticker insights. Fortunately Basch is guided by a chief resident who encourages him to take a more honest, direct stance. As Basch reflects, "I had learned something in my year of psychiatry, something about how to listen to intense feeling without flinching, how to make sense of it." At its best, perhaps the protective armor of psychiatry grants us the endurance to listen to overwhelming feelings without feeling compelled to fix them, allowing healing through empathy.

The appeal of training in psychiatry is developing oneself as a tool for understanding. Neurologists have their tuning forks, cardiologists their stethoscopes, and psychiatrists their minds' capacity for analysis and their hearts' capacity for compassion.

Although *Mount Misery* is not great literature, I wonder whether it should be required reading for those who are embarking on the arduous path of car-

ing for the mentally ill. Samuel Shem (aka Stephen Bergman '73) certainly describes presciently the vulnerability of realizing that "them" is "we," and that if we pause to listen to each other, our training teaches us to tolerate hearing about the broken dreams, darkness, isolation and longing for connection.

Nancy Rappaport is a clinical instructor at Harvard Medical School and a child and adolescent psychiatrist at Cambridge Hospital.

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Class Day



TO THE SOUNDS OF MOUSSORGSKY'S "Pictures at an Exhibition," whizzing video camcorders and cheers, the 209th Harvard Medical graduation exercises began. Although the weather was unseasonably cool, warmth was generated by the excitement of 186 students, family and friends under the tent and overflowing outside.

Co-moderator Elena Maria Martinez '97 welcomed those assembled by saying it was a day to be shared with family and friends: "Today we become doctors. Today is for all of us." Speaking on behalf of his classmates, the other co-moderator Steven N. Kalkanis '97 observed that they had learned both the art and craft of practicing medicine, including how to listen to patients. In an interesting bit of historical trivia, Kalkanis noted that for the first HMS class (in 1788), no academic preparation was necessary and even more astounding, no tuition was required.

Thomas Roberts '97 produced a chuckle with his observation that "We've completed at least 20th grade." He spoke about the many things he and his classmates had learned at HMS, including "using the term 'SOB' to exclusively refer to 'shortness of breath'." He pointed out that parts of Harrison's *Internal Medicine* and the psychiatry bible, the DSM IV manual, were "alarmingly autobiographical."

In a more serious vein, Roberts acknowledged the love and support of families and friends and, perhaps most importantly, his classmates. "I have never been surrounded by more interesting, challenging and supportive people in my 26 years." The power of ambition that they all shared, Roberts remarked, can have wide-reaching impact: "Let us be the ones to say that our collective ambition not only saved the American health care system, but also created health in our families and communities."

David Sloane '97, acknowledging that he had been unofficially chosen as the Class of '97 member who was

"most likely to continue talking," chose to alter his image. "Brevity it is," he said, so as to prevent the audience from checking their watches. By examining the two words "well" and "ill," he called on his classmates to make a choice about how they would practice medicine. He noted that by working together, much could be accomplished. "Well is the mutual responsibility that transforms a bunch of *Homo sapiens* into people, human beings. Ill is the individual ego that gets no further than itself, using others."

Guest speaker Edward M. Hundert '84, associate dean for student affairs, continued this theme of working together by reflecting on the student oath and the core values that make up the profession of medicine. Hundert, who will leave HMS to become senior associate dean for medical education at the University of Rochester, received the ultimate honor by the graduating class by being designated an "honorary member of the Class of 1997."

Hundert took the opportunity to "teach one last class" on what it means to enter the profession of medicine. He discussed how the student oath was designed to "counteract our selfish tendencies" and to respond to the middle of the night phone call from a patient by "doing the right thing." He reminded the students that they will always be identified as doctors and that medical practice must therefore be accompanied by conscience and dignity. "This mention of dignity in your oath is a reminder that you are a role model for your patients and their families. Your importance to them cannot be overstated. This is part of the deal, for better or worse: your offhand comment in the exam room will be retold throughout the extended family as 'what our mother's doctor told her.' In a word, practicing with dignity is treating people, not diseases; treating the patient, not the illness."

In his last graduation address as dean, Daniel Tosteson '49 spoke of his philosophy for learning medicine. Tosteson, who completed his twenti-

eth year as dean this year, outlined what this philosophy might look like, including three views of the human condition. "One depicting each human being as a biological organism informed by the discoveries of natural science; a second directed toward the social and economic factors affecting health as revealed through the social sciences; and a third exploring the reality that each person is born, dies and experiences illness alone, as illuminated in literature, the arts, the humanities."

Dean Tosteson also spoke to the great advances made in the last 25 years in the fields of molecular and cell biology and looked forward to potential developments in the next century. He especially encouraged the graduates to become fluent in computers and the new technologies available to them.

Before the valediction, the co-moderators honored faculty and friends of the graduating class. The teaching award for the preclinical years was awarded to Julian Seifter, associate professor of medicine, and for the clinical years to Charles McCabe, associate professor of surgery. Edward Hundert '84 received the award for the faculty member who has had the greatest impact on the students. Also recognized were the masters of the five academic societies (Ronald Arky, Daniel Goodenough, Stephen Krane, Marian Neutra and Michael Rosenblatt '73), the society administrators (Chris Coughlin, Patricia Cunningham, Elaine Glebus, Calvin Hennig and Janet Lipponen) and student affairs coordinator, Carla Fujimoto.

Then it was time for what everyone had been waiting for: the conferral of degrees. Dean Tosteson gave the students the opportunity to applaud their families and friends, who were clearly excited to witness this part of the ceremony. Upon receiving their degrees, the graduates read the oath, joined by the other physicians in the audience. Although another graduation was over,

it was just the beginning of their careers as doctors.

Among the degree recipients were 29 who graduated with combined degrees (21 of them PhDs) and many who graduated with honors or special awards. They are:

Keith Dave Amos

James H. Robinson, MD Memorial Prize for excellence in the surgical disciplines

Alexandru Cristian Bageac, cum laude

Lymphocyte-Erythrocyte Adhesion in Sickle Cell Disease

David Howard Brendel

Dr. Sirgay Sanger Award for excellence and accomplishment in research, clinical investigation or scholarship in psychiatry: *The Mind-Body Problem in Contemporary Philosophy of Mind and Clinical Psychiatry*

Andrew Tan Chan, cum laude

Robert H. Ebert Prize for excellence and outstanding accomplishments in the field of primary care medicine. *Detection of Circulating Metastatic Tumor Cells Using the Reverse Transcriptase Polymerase Chain Reaction*

Oliver Szu-Ping Chen, cum laude

Perfusion Weighted MRI of the Imaging Penumbra in Acute Stroke

Esther Jean Dechant, cum laude

Hospitalizations for Suspected Dengue in Puerto Rico, 1991-1995: Estimations by Capture-Recapture Method

Chrysoula Dosiou, cum laude

Development of Immunotherapy Against Leukemia in a Mouse Model

Sitram Manohar Emani, magna cum laude

Harold Lampert Biomedical Research Prize for the best paper reporting original research in the biomedical sciences: *Carotid Artery Compliance in Aging Spontaneously Hypertensive Rats*

Alexandra Lee Haagenen

Bemy Jelin '91 Prize to that senior who most demonstrates overall academic excellence with a career interest in pediatrics, oncology, international health or psychiatry

MaryEllen Michele Heisler, cum laude

Kurt Isselbacher Prize to the senior demonstrating humanitarian values and dedication to science. *Brazilians in East Boston: A Demographic Description and Assessment of Health Status, Services Utilization, and Barriers to Access to Health Care*

Samah Jafari, magna cum laude

An Exact Solution of the Sliding Filament Model of Muscle Contraction During Sinusoidal Stretching and Its Applications

Julie Beth Livingston, magna cum laude

The Induction of a Mucosal Immune Response in the Female Genital Tract Using Gene-gun Technology

Carl David Marci, cum laude

Bone Densitometry Substantially Influences Postmenopausal Women: Psychological Correlates and Health Related Behaviors

Cynthia Vivianne Maxwell, cum laude

Isoforms of the Sodium Pump in Normal and Hypertensive Human Pregnancy

Garth David Meckler

The New England Pediatric Society Prize to the senior who in the opinion of peers and faculty best exemplifies those qualities one looks for in a pediatrician

Jennifer Braemar Ogilvie, magna cum laude

Acid Elution of Breast Tumor Epitopes Recognized by HLA-A2-Restricted Cytotoxic L Lymphocytes and Their Characterization by Mass Spectrometry

Yngvild Kristine Grova Olsen, magna cum laude

Directly Observed Therapy for Tuberculosis in Rural Guatemala

Scott Harris Podolsky, magna cum laude

Richard C. Cabot Prize for the best paper on medical education or medical history: *Clonal Selection Theory and the Antibody Diversity Debate: A Case Study of the Interplay Between Ideas and Methodology in the Construction and Transmission of Scientific Knowledge.*



Stelios Manolis Smirnakis, magna cum laude

Leon Reznick Memorial Prize for excellence and accomplishment in research: *Spike Bursts in Visual Responses of Retinal Ganglion Cells. How Much Does the Temporal Fine Structure Within a Spike Contribute to the Neural Code?*

Colin Montgomery Sox

The Community Service Award to the senior who has done the most to exemplify and/or promote the spirit and practice of community service. Robert H. Ebert Prize for excellence and outstanding accomplishments in the field of primary care medicine

Colin Montgomery Sox and Ashish K. Jha

Rose Seegal Prize for the best paper(s) on the relation of the medical profession to the community. Colin Montgomery Sox : *Insurance or Regular Physician: Which is the Most Powerful Predictor of Access to Health Care?* Ashish K. Jha: *Identifying Adverse Drug Events: Development of a Computer-Based Monitor and Comparison to Chart Review*





Jeremy Halberstadt
and son.

Michael Alan Steinman

Henry Asbury Christian Award for notable scholarship in studies or research: *Etiology and Empiric Treatment of Acid-Fast Bacillus (AFB) Smear-Negative Pulmonary Disease in Botswana: Background Review and Discussion of the BOTUSA Research Protocol.*

Collin M. Stultz, magna cum laude

James Tolbert Shipley Prize for excellence and accomplishment in research: *Predicting Protein Structure with Probabilistic Models.*

Hye-Won Jacqueline Suk, cum laude

Clinical and Pathological Characteristics of Myocarditis: A Retrospective Analysis of the Massachusetts General Hospital Experience, 1975-1996

Usha Beth Tedrow, cum laude

Imaging of the Microvasculature in Human Breast Carcinomas

Jack Wei-Lan Tsao, cum laude

Early Events in Wallerian Degeneration

Scott Michael Wasserman, magna cum laude

Gene Expression in Vascular Endothelium: Biomechanical and Biochemical Paradigms of Activation

Michael Wynn Yeh, cum laude

Immune-stimulated But Not HIV-infected Human Macrophages Produce Neurotoxic Amounts of L-Cysteine

Keith Dave Amos, Laura Hanson Brown, Nneke R. Azikiwe, Garrick Lydell Motley and Collin M. Stultz

The Multiculturalism Award to the senior in each academic society who has done the most to exemplify and/or promote the spirit and practice of multiculturalism and diversity

A Philosophy of Medicine

by Daniel C. Tosteson

FOUR YEARS AGO I URGED YOU TO develop a philosophy that will sustain you in your efforts to learn whatever you need to know and when you need to know it during your careers as physicians, dentists and scientists. I told you of Aristotle's aphorism that "Medicine begins in philosophy and philosophy ends in medicine."

I ask you to reflect on this with me again in light of your experiences in medical school. Now what do you think that such a philosophy for learning in medicine should include? What

are the attitudes, skills and framework of knowledge that a philosophy for physicians should cultivate and nurture?

I will speak to each of these three categories: attitudes, skills and a framework of knowledge, and give you some examples of what seem to me important in each category.

An attitude essential for all physicians (and other health professionals) is respect for each person who seeks our help and each colleague with whom we work; a recognition that

each patient is the moral and ethical equal to me. It is the idea explored by the great Jewish theologian and philosopher Martin Buber, in his 1923 treatise "I and Thou." Buber asserts that human beings use two primary words, each double words "I-it" and "I-Thou," and that the "I" in these two words is not the same.

The ensemble of "its" of which we are aware—the tent, the buildings, the sky—are perceived by a set of "I"s. In a sense, each precept of an "it" defines an "I." This set of "I"s may be viewed



as an expression of the rational scientist in each of us. In an analogous sense, each precept of a thou, each individual to whom you relate as a whole person, who seen from their perspective is an I, defines from your perspective an I. This set of "I"s defined by thous may be viewed as the humanist/altruist in each of us. For Buber, the set of I-thous, the integral over all to whom you relate as persons, is an expression of the Supreme Thou, the God whom he so faithfully and intelligently sought and celebrated.

A more secular but equally thoughtful formulation was offered by the distinguished neurophysiologist Sir Charles Sherrington in *Man on His Nature* published in 1940 and (revised in 1950) by Doubleday Anchor Books. It was based on his Gifford Lectures at the University of Edinburgh in 1937/8. In the last chapter of his treatise, he imagines a conversation in which Nature defends itself against the complaint that it has imposed unjustly harsh conditions of natural selection on humankind.

Sherrington's voice of Nature says to us, "You are my child. Do not expect me to love you. How can I love—I who am blind necessity? I cannot love, neither can I hate. But now that I have brought forth you and your kind, remember you are a new world unto yourselves, a world which contains in virtue of you, love and hate, and reason and madness, the moral and immoral, and good and evil. It is for you to love where love can be felt. That is, to love one another. Bethink you too that perhaps in knowing me you do but know the instrument of a Purpose, the tool of a Hand too large for your sight as now to compass. Try then to teach your sight to grow." Subsequently, Sherrington concludes, "We have, because human, an inalienable prerogative of responsibility which we cannot devolve, no, not as once was thought, even upon the stars. We can share it only with each other."

My thesis is that both the "I"s of "I-it" and "I"s of "I-thou" are essential

parts of a workable philosophy for medicine. The rational scientist "I" deduces the proximate physical, chemical, biological and socioeconomic causes of pathology, and devise better ways to change these determinants in order to cure and prevent disease. The human/altruist "I" makes it possible to communicate effectively and to empathize with a person who is feeling ill. In the words of Francis Weld Peabody, for whom the Peabody Society is named, "The secret of patient care is caring for the patient." It is through our I-Thous that we are able to care. It is through our I-Its that we are able to care effectively.

Another attitude that should receive attention is doubt and skepticism. Even today, with our remarkably detailed knowledge of molecular and cell biology, often we do not know reliably the mechanism of pathogenesis and the consequences of intervention of the clinical problems we are asked to solve. Because the stakes are so high, it is often felt necessary to rationalize our actions by an inadequate theory. Not uncommonly, these theories become accepted as conventional wisdom. It is important for physicians and medical scientists to question constantly the basis for the paradigms of current practice. It is through the rejection of inadequate hypotheses that more adequate concepts emerge.

As noted by the great French physiologist Claude Bernard in his *Introduction to Experimental Medicine** published in Paris in 1860:

It has often been said that, to make discoveries, one must be ignorant. This opinion, mistaken in itself, nevertheless conceals a truth. It means that it is better to know nothing than to keep in mind fixed ideas based on theories whose confirmation we constantly seek, neglecting meanwhile everything that fails to agree with them. Nothing could be worse than this state of mind; it is the very opposite of inventiveness. Indeed a discovery is generally an unforeseen relation not included in theory,

for otherwise it would be foreseen. In this respect, indeed, an uneducated man, knowing nothing of theory, would be in a better attitude of mind; theory would not embarrass him and would not prevent him from seeing new facts unperceived by a man preoccupied with an exclusive theory. But let us hasten to say that we certainly do not mean to raise ignorance into a principle. The better educated we are and the more acquired information we have, the better prepared shall we find our minds for making great and fruitful discoveries. Only we must keep our freedom of mind, as we said above, and must believe that in nature what is absurd, according to our theories, is not always impossible.

I turn now to two skills to include in your philosophy for learning in medicine: first, the skill of communicating with other persons, particularly your patients and colleagues; and second, becoming not just literate but fluent in the use of computers and other electronic information processing devices.

Doctoring is a people business. In essence, it is a service rendered by a physician to a patient. Its goal is to help the patient or potential patient find a healthier way to live. This involves eliciting reliable data from the patient. Some of this information can be gleaned from careful observation of physical signs, but much of it must be inferred from conversation.

As you have learned in your clerkships, conducting an appropriately comprehensive but brief and efficient clinical interview is a skilled art. Among other characteristics, it involves asking the right, but not unnecessary, questions, and listening, really paying attention, to the answers. It requires cultivating awareness of the emotions that the patient is feeling at different points in the transaction. Encouraging patients to comply with whatever diagnostic or therapeutic actions need to be undertaken also depends on the physician's skill at communicating with the patient.

* From the translation by Henry Copley Green, Schuman, 1927.

Computers and related electronic information processing technology have played a progressively more important role in medical practice, research and education for the past three decades, and particularly during the past three or four years with the emergence of the Internet. The ease with which an individual can access other individuals and a wide variety of relevant databases continues to increase. Each of the Harvard-affiliated hospital systems is developing clinical information systems that markedly increase the range and speed of processing information necessary for patient care and billing. All of the Harvard Medical School academic departments in the Quadrangle and the affiliated institutions are in the process of being connected through an Intranet organized through the Harvard Medical Center.

In research, the field of genomics has emerged to store, retrieve and analyze data gathered in the Human Genome Project, permitting accelerated recognition of sequence homologies between newly and previously described DNA segments. In education,

the faculty at the Harvard Medical School-Beth Israel-Deaconess-Mt. Auburn Institute for Research and Education are creating "virtual patients," multi-media presentations of the most important clinical problems, which the faculty has decided should be addressed during the required clerkships. Perhaps the most important potential use for these technologies will be the capacity to model quantitatively reaction cascades known to be important in signal transduction, the cell cycle and other complex cellular, tissue, organ or organismic function.

If these, then, are some of the attitudes and skills that your philosophy for medicine should address, what about a framework of knowledge that will accommodate the learning that you will need to continue? The most important property of such a framework is that it include all determinants of human health. It is, of course, impossible to address all of the components in any detail in a finite period of time, be it a four-year curriculum or a lifetime. But an appropriately broad and diverse set of database files serves

to remind us of categories of health-relevant information that we might otherwise neglect. One way to devise an inclusive framework of knowledge relevant to health and disease would be to develop three sets of portraits of the human situation or three databases, one depicting each human being as a biological organism informed by the discoveries of natural science; a second directed toward the social and economic factors affecting health as revealed through the social sciences; and a third exploring the reality that each person is born, dies and experiences illness alone as illuminated in literature, the arts and the humanities.

During its 215 years of existence, the Harvard Medical School has witnessed remarkable transformations in our understanding of the human situation. The most important source of these transformations has been discoveries in the natural sciences, physics, chemistry and biology. At the time of the founding of the school, Lavoisier published his studies that recognized the similarity between respiration and fire.

The twentieth century may be



Keith Amos and Marcus Elliott-Woody.



Sherleen Huang, Virginia Hung and Tina Denise Jackson.

viewed as the century of physics, particularly nuclear and astrophysics. It has revealed the existence of the four fundamental forces and how they interact to give rise to stars and galaxies and all matter and energy. As a consequence, we understand much more clearly the place of our planet Earth in the expanding universe.

I expect that the twenty-first century will be the century of biology and medicine. Discoveries in molecular and cell biology and inventions of technologies that enable more sophisticated observations of biological systems during the past century, and particularly during the past 25 years, have paved the way. During the twenty-first century our understanding of the place of *Homo sapiens* in the biosphere of earth will be transformed. This transformation will inform disease prevention, diagnostic and therapeutic strategies that are more subtle and powerful than we can now imagine.

An excellent case in point may be found in the May 2, 1997 *Science* which includes a section on "Frontiers in Microbial Biology." Featured is how modern genomic, molecular and cell biological techniques applied to microbes (viruses, bacteria and eukary-

otic parasites) are providing new approaches to the development of vaccines and anti-microbial drugs. An example is the work of John Mekalanos, Higgins Professor of Microbiology and Molecular Genetics and head of the Department of Microbiology. John and his post-doctoral fellow Matthew Waldor reported in *Science* last June that the gene that codes for the cholera toxin is not present in the genome of *Vibrio cholerae*, the bacterium that has been long recognized as the cause of cholera. Rather, it is found in a virus, a bacteriophage that occasionally infects colonies of the vibrio. Only bacteria that are infected with the virus produce the toxin and cause the disease. Moreover, they found that the receptor of the virus on the bacterial surface is a structure that is necessary to enable the vibrio to colonize the gut.

Not all strains of the vibrio carry the gene for the colonizing, enabling surface molecule, which also serves as the receptor for the bacteriophage that carries the cholera toxin gene. Thus, molecular biology assures that only those bacteria that can successfully colonize the gut are susceptible to infection by the virus that carries the cholera toxin gene. These observations

go a long way toward accounting for the sporadic nature of epidemics of cholera, and providing targets for vaccines and drugs to prevent and treat disease.

But even more profoundly, recent advances in microbial biology are transforming our understanding about the unity and diversity of life. It now appears clear that all living organisms from man to the most bizarre and exotic microbes isolated from hot springs in Yellowstone Park or in the depths of the sea use the same genetic code relating sequences of bases in nucleic acids (DNA and RNA) to sequences of amino acids in proteins. Our vision of the unity of biology is thus expanding. By the same token, we now realize that the cellular, molecular and metabolic diversity of life are far broader than we thought even 20 years ago. We now accept that we have only identified and characterized a tiny fraction of all the microbes that exist on earth.

In the May 2 *Science*, Norman R. Pace asserts that only about 5,000 noneukaryotic (cells without nuclei) have thus far been described. By contrast, 0.5 million species of insects are known. The reason for the relatively small number of identified microbes

has been the impossibility of accumulating a sufficient quantity of pure stains by cultivation in the laboratory. Most microbes defy culture by known techniques. The recent emergence of polymerase chain reaction technology has permitted the sequencing of extremely small samples of ribosomal RNA.

Such analyses of microbes found in anaerobic, very hot conditions have allowed the construction of a phylogenetic tree based on the homology of the ribosomal RNA between organisms. This tree has a root that is connected to three broad domains: bacteria, archaea and eukarya (which includes all plants and animals). Of these three, the archaea appear to be the most primitive and the likely locus of the first life forms.

Equally striking is the metabolic diversity of these newly recognized microbes. Pace points out that most eukarya and bacteria are metabolic "organotrophs." We burn hydrocarbons with oxygen to form CO₂ and H₂O. Photosynthetic plants and bacteria form hydrocarbon from CO₂ and water using the energy of electromagnetic radiation from the sun. The global balance of CO₂ in the atmosphere has been thought to be the result of production of CO₂ by respiration (and internal combustion engines!) and consumption of CO₂ by photosynthesis.

It now appears that most of the CO₂ fixation on our planet does not occur by photosynthesis, but rather by a process called lithotrophy. Lithotrophy occurs in the absence of light and often at high temperature. It generates the energy for CO₂ fixation by the oxidation of reduced inorganic substrates such as hydrogen or hydrogen sulfide by the reduction of oxygen, sulfur, nitrate or sulfate. It now seems likely that the first forms of life arose under conditions of darkness, very little oxygen, and temperatures near the boiling point of water, and that microbes, particularly archaea, are present throughout much of the Earth mantle at

permissive temperatures.

These observations and conclusions radically alter our estimates of finding life forms outside planet Earth and how to search for them. They transform our thinking about our place in the biosphere throughout the universe. Your portrait of human beings as biological organisms as illuminated by natural science should certainly include an awareness of these cosmic connections of the biology of man.

Of equal importance for learning in medicine is a set of files in your personal computers, of each human being as a member of society. All the developments that make medicine today more effective than it was one hundred or ten years, or even one year ago, all of medical science and technology, are socioeconomic processes. Together we are more effective in helping each other live healthier lives. But we also make each other sick, not only by transmitting microbes, but by allowing

Cheryl White, Stephen Williams and Jonathan Winickoff line up for their degrees.

conditions of poverty that allow poor nutrition, hygiene and education to persist, by creating and sustaining emotionally stressful situations, by individual and domestic social violence.

As one section in your file of social determinants of poor health, let me suggest the perspective of Thomas Homer-Dixon in his paper "The Ingenuity Gap: Can Poor Countries Adapt to Resource Scarcity" published in *Population and Development Review* in September 1995. He points out that the population of Earth was at that time 5.7 billion, growing at a rate of 1.6 percent per year. The real economic product per capita is growing at a rate of 1.5 percent per year.

Combining these two effects, the world economic product, which was about \$25 trillion, will rise to \$50 trillion in 1995 dollars by 2020. From the perspective of human health, what will be the consequences of this inexorable growth? Will increased global wealth be allocated in a way that will decrease per capita morbidity and mortality or will the reverse ensue?

Homer-Dixon introduces the



notion of the ingenuity gap as an important determinant of the course of events. He defines ingenuity as ideas applied to solve practical social and technical problems. He takes ingenuity to be a factor of production, like labor, capital and natural resources. It reflects the number of ideas—good, bad or indifferent—that are applied to a problem. He argues that the capacity of a nation to respond to change requires, among other resources, ingenuity. He defines the difference between the demand and supply of ingenuity as “the ingenuity gap” and predicts that the ingenuity gap will be an important determinant of whether a particular society will flourish. He discusses factors essential to assure an adequate supply of ingenuity, such as adequate investment in research and education.

This frame of reference is useful in

thinking about the future organization of medical education, research and practice. You will surely need to address the socioeconomic dimensions of your professional lives for the foreseeable future. An awareness of the thinking of scholars in economics and the social sciences should have a place in your files on each human being, each potential patient as a member of society.

The third set of portraits to include is drawn from literature, the visual and performing arts, and from the work of scholars in the humanities. The concerns of humanists are largely directed toward the unique perceptions, feelings and memories that comprise the inner life of each human being. The experiences of illness occupy a significant part of all of our lives. An important aspect of illness is a withdrawing of attention from external circum-

stances and an increased preoccupation with whatever is awry: pain, anxiety, fear, itching. Artists often address the connections between the disparate elements within each of our individual minds and between the minds of each of us. They seek metaphor to express the essence of the human experience. When successful, they come closest to expressing what illness really feels like.

Since before I was a medical student, I have enjoyed poetry. I became fond of the work of physician-poet William Carlos Williams when I was a student at Harvard College and at Harvard Medical School in the late forties. Hear the preface to his epic poem, “Paterson,” which evokes the New Jersey city where he practiced medicine and wrote poetry most of his adult life:





"Rigor of Beauty is the quest. But how will you find beauty when it is locked in the mind past all remonstrance?"

To make a start,
out of particulars
and make them general, rolling
up the sum, by defective means—
Sniffing the trees,
just another dog
among a lot of dogs. What
else is there? And to do?
The rest have run out—
after the rabbits.
Only the lame stands—on
three legs. Scratch front and back.
Deceive and eat. Dig
a musty bone

For the beginning is assuredly
the end—since we know nothing, pure
and simple, beyond
our own complexities.

Yet there is
no return: rolling up out of chaos,
a nine months' wonder, the city
the man, an identity—it can't be
otherwise—an
interpenetration, both ways. Rolling
up! obverse, reverse;
the drunk the sober; the illustrious
the gross; one. In ignorance
a certain knowledge and knowledge,
undispersed, its own undoing.

(The multiple seed,
packed tight with detail, soured,
is lost in the flux and the mind,
distracted, floats off in the same
scum)

Rolling up, rolling up heavy with numbers.

It is the ignorant sun
rising in the slot of
hollow suns risen, so that never in this
world will a man live well in his body
save dying—and not know himself
dying; yet that is
the design. Renews himself
thereby, in addition and subtraction,
walking up and down.

and the craft,
subverted by thought, rolling up, let
him beware lest he turn to no more
than
the writing of stale poems . . .
Minds like beds always made up,
(more stony than a shore)
unwilling or unable.

Rolling in, top up,
under, thrust and recoil, a great
clatter:
lifted as air, boated, multicolored, a
wash of seas—
from mathematics to particulars—

divided as the dew,
floating mists, to be rained down and
regathered into a river that flows
and encircles:

shells and animalcules
generally and so to man,

to Paterson.



*by William Carlos Williams, from
PATERSON. Copyright © 1946 by
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When I was a student, I also encountered Robert Frost who sometimes read and talked about his poetry at Harvard College. One of his insights into the human situation is expressed in his poem "West Running Brook":



"Speaking of contraries, see how the brook
In that white wave runs counter to itself.
It is from that in water we were from
Long, long before we were from any creature.
Here we, in our impatience of the steps,
Get back to the beginning of beginnings,
The stream of everything that runs away.
Some say existence like a Pirouet
And Pirouette, forever in one place,
Stands still and dances, but it runs away;
It seriously, sadly, runs away
To fill the abyss's void with emptiness.
It flows beside us in this water brook,
But it flows over us. It flows between us
To separate us for a panic moment.
It flows between us, over us, and *with* us.
And it is time, strength, tone, light, life, and love—
And even substance lapsing unsubstantial;
The universal cataract of death
That spends to nothingness—and unresisted,
Save by some strange resistance in itself,
Not just a swerving, but a throwing back,
As if regret were in it and were sacred.
It has this throwing backward on itself
So that the fall of most of it is always
Raising a little, sending up a little.
Our life runs down in sending up the clock.
The brook runs down in sending up our life.
The sun runs down in sending up the brook.
And there is something sending up the sun.
It is this background motion toward the source,
Against the stream, that most we see ourselves in,
The tribute of the current to the source.
It is from this in nature we are from.
It is most us."

Today will be the day
You said so."

No, today will be the day
You said the brook was called West-Running Brook."

"Today will be the day of what we both said."



From *THE POETRY OF ROBERT FROST EDITED BY
EDWARD CONNERY LATHEM*, © 1956 by Robert Frost,
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It was later in my life that I encountered the work of Emily Dickinson, the remarkably clear and tough reclusive poet from Amherst. She understood deeply the experience of illness:



I can wade Grief –
Whole Pools of it –
I'm used to that –
But the least push of Joy
Breaks up my feet –
And I tip – Drunken –
Let no Pebble – smile –
Twas the New Liquor –
That was all!

Power is only Pain –
Stranded, thro' Discipline,
Till Weights – will hang –
Give Himmaleh –
They'll Carry – Him!

The Brain – is wider than the Sky –
For – put them side by side –
The one the other will contain
With ease – and You – beside –

The Brain is deeper than the sea –
For – hold them – Blue to Blue –
The one the other will absorb –
As Sponges – Buckets – do –

The Brain is just the weight of God –
For – Heft them – Pound for Pound –
And they will differ – if they do –
As Syllable from Sound



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THE POEMS OF EMILY DICKINSON,
Thomas H. Johnson, ed., Cambridge, Mass.:
The Belknap Press of Harvard University Press,
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and Fellows of Harvard College.*

I do not intend to exclude prose, drama, the visual or performing arts or history or religious works from your portfolio. Quite the contrary, but I do urge you to include works of artists and humanists. They address dimensions of being that are essential for physicians to understand.

I hope that my reflections will move you to continue the construction of your own philosophy for learning in medicine. If you make the investment, I assure you that it will serve you well. Two weeks from now most of you will begin the busiest time of your lives. It will require some effort to keep your mental balance, to place your daily experiences in the context of your long-term professional goals. The sturdier your philosophical foundations, the easier it will be day by day to build the attitudes, including respect for each patient and colleague and skepticism of medical dogma; the skills, including the art of personal interviewing and becoming computer fluent; and a framework of knowledge that refers to all categories of determinants of human health, including portraits of each human being as a biological organism, as a member of society and as a unique individual. Of course, these components of your philosophy are not isolated from one another but joined in your imagination to form your vision of yourself and universe. I hope that your vision will continue to grow and evolve throughout your lives, for then you will be following your new pathway. ❧

Daniel C. Tosteson '49 stepped down as dean of the Harvard Medical School in July after 20 years.

On Entering the Profession

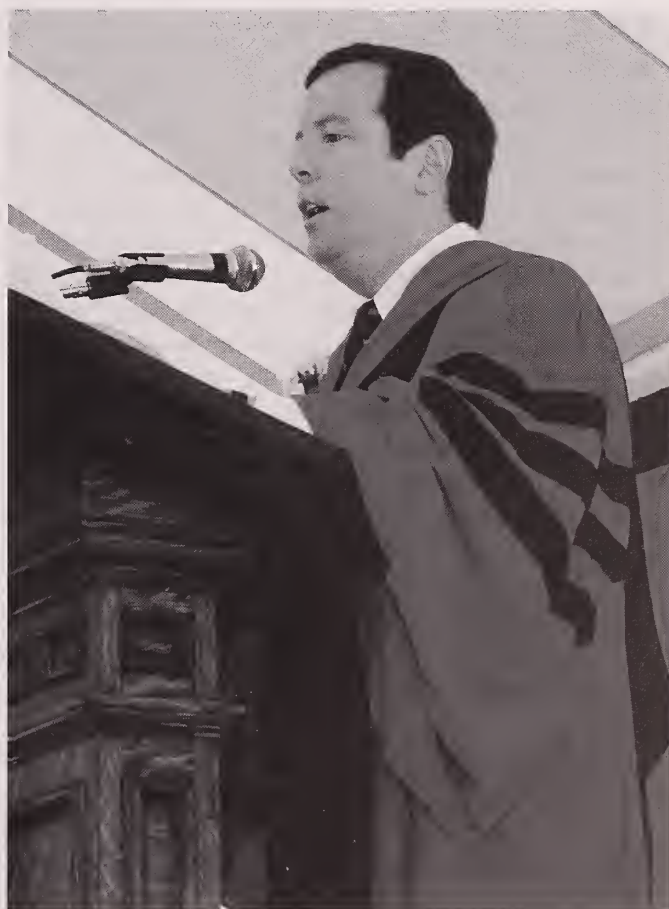
by Edward M. Hundert

I CAN'T TELL YOU HOW HONORED I am that you've asked me to speak here today. It's humbling to stand on the podium before some of the greatest leaders in the history of American medicine, and even more humbling to stand before the future leaders of medicine—all of you who will write the next chapters in that history.

As I've wrestled over what to discuss this afternoon, I realized that all the truly memorable graduation talks

I've ever heard dealt with some fundamental question about personal values—the kind of basic values that are present in subtle ways in everything we do, but which an occasion of such symbolic transition as a graduation provides opportunity to address directly.

I'd like to reflect with you on the core values of the profession you formally join today. Even while still students here, you've always, I hope, been





encouraged to think of yourselves as professionals. But with the awarding of your degrees there is no ambiguity left! So I'm going to take advantage of your flattering invitation to do a little teaching this afternoon, as I'm sure you knew I would: one last class on the subject of what it means to enter our profession.

The word "profession" derives from the root *professus*—the past participle of *profateri*—to avow before, to swear a sacred oath. These ceremonies today will conclude with your taking the oath that your class has written so painstakingly, after reviewing the central tenets of all the classical oaths from the Hippocratic Oath to Maimonides' prayer to the 1948 Declaration of Geneva.

As suggested by its etymology, you formally become a professional this afternoon when you take your oath. Most people find it a surprisingly powerful experience, and it should be. The oath is designed to do nothing less

than to counteract human nature, to counteract our own very natural human tendencies to act in selfish or at least self-centered ways. One of the main objects of the exercise is that, just maybe, when you're confronted with some clinical situation in the middle of the night, and you're exhausted, angry, and tempted not to make that extra effort you would want for yourself or your own loved ones—you might have the thought: "Wait a second, I took an oath. I swore on my honor that I would do better than this" and get yourself up and take some time to talk with that patient's family, or whatever it is that needs to be done.

My hope is that when you take your oath today, the lifelong memory of doing so will nudge you to do the right thing even when you're sorely tempted to take some short cut, because doing it the right way—every time—is just part of the package of privileges and burdens of being a professional.

And so I'd like to review with you

your class oath, with the perennial remembrance of my favorite quotation from Mark Twain, who once said, "To be good is noble, to teach others to be good is nobler—and less trouble!"

The oath begins:

Now being admitted to the profession of medicine or dentistry, I solemnly pledge myself to the service of humanity.

This pledge to service is a burden that will encumber you through the rest of your professional lives. Mother Teresa once said, "I know God will not give me anything I can't handle. I just wish that He didn't trust me so much!" Your commitment to service is of course not merely a burden, it is equally a tremendous privilege and a joy and an opportunity to make a difference. In his book *The Disuniting of America*, Arthur Schlesinger quotes Thomas Paine, who penned the words, "We have it in our power to begin the world all over again." This echoes Tom Roberts' quotation from Margaret Meade: "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it's the only thing that ever has."

I will practice medicine with conscience and dignity.

Dignity is a word not used enough nowadays. What is dignity? If you think about it for a minute, I'm sure you can identify exemplars of it. That faculty member you count as your personal mentor has it. Your elected moderators and classmates, Steve and Elena, both have it. But how do you define it?

Practicing with conscience and dignity is practicing with an attitude of continual awe at the human condition. Dignity requires not just a deep respect for others, but also a deep self respect, which is usually harder to muster. This mention of dignity in your oath is a reminder that you are a role model for your patients and their families. Your importance to them

cannot be overstated. This is part of the deal, for better or worse: your off-hand comment in the exam room will be retold throughout the extended family as “what our mother’s doctor told her.” In a word, practicing with dignity is treating people, not diseases; treating the patient, not the illness.

I will hold in confidence all that my patient confides in me.

This confidentiality pledge brings me to a clinical application of your graduation oath. I remember treating a very depressed, somewhat paranoid adolescent patient at McLean. The clinical team was having difficulty formulating a treatment plan because the patient so feared that the details of his story would be shared with his parents.

What finally enabled us to help him, with a very happy ending, was when in desperation I said to him, “Listen. When I became a doctor I took a sacred oath to protect the confidentiality of my patients and I swore that oath on my honor.” With that, he finally revealed the intense pain in his life and we were able to help him steer that life back on course. I believe that this was not so much because I reminded him of my duty to protect his confidentiality, but because he was witness to me reminding myself that I have such a duty. That opportunity was his gift to me.

I will strive to promote the honor and integrity of the medical profession.

This dedication to promoting the honor and integrity of the profession extends your obligations beyond your practice of medicine to everything else you do. From now on, even when you’re not on duty, you are always going to be viewed, in part, as a physician or dentist, and so your behavior reflects on the honor and integrity of the profession. You may not always like it, but again, this is part of the package you have bought into (at great expense, I might add!).

Always remember that when you are in other positive roles, serving on your school board, as your kid’s soccer coach, or at your church, synagogue or mosque, you do a double service for our profession, reminding people of the qualities that should make physicians stand out as role models in our communities. When we say part of the Harvard mission is training leaders, these leadership roles in the public schools and soccer fields and churches are at least as important to our profession as leadership roles in hospitals, specialty organizations and medical schools.

I will give respect and gratitude to my deserving teachers, ever mindful of my continuing role as both a student and a teacher.

In just a few weeks, you will have medical students looking to you as their interns! I believe our obligation to teach our students and mentor those coming up derives from the debt we owe our own teachers and mentors: it’s the only way we have to pay them back.

But this line of the oath speaks not only to the role of teacher but also to your continuing role as a lifelong student of medicine. In one of the wonderful student speeches from this podium four years ago, Sanjoy Dutta pointed out that you enter medical school answering most questions by saying “I don’t know,” and after learning from the experts for four years, you leave answering “We don’t know.” I would encourage you always to think of the diploma you receive today as your membership card into the “we” who don’t know.

In the service of patients, I will promote the health and well being of myself and my colleagues.

This is obviously the idea that we are indeed our brothers’ and sisters’ keepers, and that we particularly owe this obligation to our fellow physicians and

dentists because of the added impact it has not just on them but on their patients. Remember that you’re pledging equally to promote your colleagues’ health and well being and your own. When you think about famous medical aphorisms, “first, do no harm” is at last becoming the subject of much public and professional discussion, while “physician, heal thyself” has yet to break into public consciousness.

You’re taking an oath today to take care of yourselves—to fight that most common of doctor syndromes of being so hard on ourselves even as we try to be gentle to our patients. As a devout student of human mental processes, I guarantee that our ability to project any feeling onto others is limited by our own internal capacities, so the degree to which we are gentle on ourselves sets an absolute cognitive and emotional limit on how gentle we can ever be with our patients, our spouses or anyone else.

I will treat all in need without bias and with openness of spirit.

This is not about political correctness. It is fundamental to that attitude of awe of the human condition already discussed. When we all recite together our commitment to treat all in need without bias, I hope we’ll be mindful of all the biases we might bring to our work, from biases of race, religion, nationality and social standing to gender bias, homophobia, and bias against high-tech medicine to bias against low-tech medicine. I would argue we must be mindful most of all of a different kind of bias for which we are particularly at risk: the bias of science—a belief that clear answers will emerge if we only have enough data.

The week Derek Bok retired as president of Harvard University, a member of the press asked him what he hoped students would get from a Harvard education. He said three words: “Tolerance for ambiguity.” I would say that goes double for

Harvard students over here on the Quadrangle.

I will maintain the utmost respect for the dignity of all people.

When you are faced with a patient whose own continuing behavior is the cause of the illness, who is smelly or rude and certainly does not appear to be treating you with respect, human nature screams out at us to act in kind: an eye for an eye, as the ancients aptly captured this human frailty. But your oath is designed to counteract human nature, and as Mahatma Gandhi once said (although not in these exact words): if we all follow the dictum of an eye for an eye and a tooth for a tooth, we will all be blind and edentulous! Challenging clinical encounters with such patients, as difficult as they are, represent the finest opportunity you will ever have to role model a kind of behavior that person may have never before encountered, you may literally change his life.

This part of the oath should also be a reminder to practice with the common sense demanded by human dignity—to scrap the search for a fascinating rare disease and get back down to earth, where your patient is suffering and you can help. So, despite all the medical esoterica you’ve all so skillfully mastered, when a patient comes to you and says: “Doctor, it’s awful. When I touch my stomach, it hurts. When I touch my leg, it hurts. When I touch my head, it hurts. When I touch my toe, it hurts.” I hope you will have the capacity, without any further scans or tests or procedures, to respond: “I know what you’ve got: a broken finger!”

Even under threat, I will not use my knowledge contrary to the laws of humanity.

This line comes from the Geneva Declaration and it is a stark reminder of the horrors of Nazi medicine. Even after we’ve already pledged ourselves

to practice with conscience and dignity, we fragile humans need this added reminder of some limits set by the laws of humanity because history shows repeatedly how even well-developed consciences have led people to do the most horrible things to one another. When I think about the many sobering lessons of the Second World War, I often reflect on yet another graduation speech, given after the war by one of the individuals to whom we owe our freedom today.

In one of his very last public orations, Sir Winston Churchill spoke at a graduation. As he spoke about the importance of always standing up for our values, he became pensive. Then he paused and said to the young people, “Never give up.” Then he paused, and he said, “Never give up.” The audience waited impatiently for him to continue. There was a very long pause, and then he said, “Never give up” and, overcome with emotion, he left the podium.

In the United States in 1997, we still need to articulate a pledge not to use our knowledge contrary to the laws of humanity. Why? Because we’ve been acculturated, not in the racist beliefs of Auschwitz or Tuskegee, but in the medical beliefs that have led many physicians to feel that the death of the patient is our own moral failing. Churchill’s dictum never to give up is about defending the laws of humanity; it is not a clinical guide to practice in the ICU.

In some states the citizens have felt the need to pass referenda to protect themselves from well meaning doctors of good conscience, citizens who fear we might inflict no end of suffering on them when their time comes to die. So let me assure you that we need this pledge as much as ever before never to use our medical knowledge contrary to the laws of humanity.

And above all, the health and life of my patient will be my first consideration. These promises I make freely and upon my honor.

Although some versions of the medical oath begin with a statement like this, your class has wisely made this the punch line of the story, the “take-home message” as educators are fond of saying, because putting your patient first is ultimately what makes you a doctor. We think of the last line of Francis Weld Peabody’s classic essay, “The Care of the Patient,” which concludes with the words: “The secret of the care of the patient is in caring for the patient.” By highlighting this as the final statement, you also link it directly to your pledge that you are making these promises upon your honor, which I would argue is really the most important part of the oath.

They say that wisdom and maturity consist in being able to make use of contradictions held simultaneously in your mind. So, in closing, I’d add the admonition that as important as it is to take your work seriously, it is important not to take yourself too seriously. Last May, the first-years had a year-end class meeting, and asked a few of us to give them advice. The best advice, I thought, came from Elio Raviola, who told them the most important thing they could do throughout their careers is, at least once a month, to get up in the morning, look in the mirror and laugh your head off at what you see. The great British theologian G.K. Chesterton once said that the reason angels can fly is that they take themselves lightly.

So you have to lighten up on yourselves even when it comes to all those serious roles you take on, and never fail to be true to yourselves. Because, as the greatest psychiatrist who ever lived once said, “This above all, to thine ownself be true; and it must follow, as the night the day, thou canst not then be false to any man.” ❧

Edward M. Hundert ’84 was HMS associate dean for student affairs for seven years. As of July 1 he is senior associate dean for medical education at the University of Rochester.

In Honor of Ambition

by *Thomas Roberts*

THERE IS IRONY TO MY DELIVERING one of the commencement addresses, as I had good reason to believe that I would not make it to Harvard Medical School. I was informed at my interview that I had misspelled a word on my application, prompting the interviewer to question whether I was conscientious enough to be a medical student at Harvard. I was surprised

then to see the thin notification envelope that offered me admission to the New Pathway. As I was denied admission to the HST program, I can only surmise that correct spelling is a requirement only of HST.

I found that my decision to come to Harvard made at least two people happy. Because I did not want to introduce barriers between me and the

people in my hometown, I decided that I would not tell them where I was planning to attend medical school. I assumed my parents would adopt the same approach, so I asked my father, "You probably feel the same way, huh, Dad?"

He looked at me with an embarrassed smile and said, "Tom, I have to be honest with you, I try to see how many times I can say Harvard in one sentence: 'My son Tom, the Harvard Medical student, is going to Harvard Medical School to become a Harvard doctor.'" He added, "And your mom has already bought a logo sweatshirt and is outside applying the bumper stickers."

So why were my parents so happy? I reflected on what we did here. One of the first things we did was to buy one of those four-color pens and take our New Pathway naps. Then, we cleaned up our language, as we began to use the term "SOB" to refer exclu-



Co-moderator Steven Kalkanis at the podium, with "back-up" support: co-moderator Elena Martinez; H. Frank Bunn, MD; and student speakers David Sloane and Thomas Roberts.

sively to “shortness of breath.” We became experts on pressing medical questions, such as “Is the show *ER* really what it’s like?” and “What do doctors really do when they disappear from the exam room for what seems like hours?” To our chagrin, many of us found that Harrison’s *Internal Medicine* and psychiatry’s DSM IV became alarmingly autobiographical. And we could say without blaspheming that “Elio Raviola is an anatomy god.”

Upon further reflection, I realize that we also changed by gaining confidence on the wards, perhaps at times, too much. At the beginning of my third year, a resident woke me with “Tom, we have another simple laceration

for you to sew. Do you want the case?” Although exhausted, I enthusiastically responded, “I would absolutely love to! You know I can learn from EVERY case.” By the end of my fourth year, post-match, I was awakened to “Tom, we have a patient coming in by Life Flight, intubated and paralyzed with acute intermittent porphyria. Do you want the case?” Now, Dean Federman, I must ask you to close your ears, but I was reported in the morning to have said, “AIP, sounds interesting. I will look forward to hearing about it tomorrow on rounds.”

So sure, some things have changed, but a lot has stayed the same. For

example, I still do not know why Boston drivers beep at me so much. More to the point, many of us continue to benefit from the supreme privilege of supportive parenting. And we remain ever thankful to our partners and families who have loved us even when we forgot how to love ourselves. Our respect for each other has remained strong, and we have found that the most enduring annuity from the lottery prize of acceptance has been the exposure we have had to one another. I can honestly say that I have never been surrounded by more interesting, challenging and supportive people in my 26 years.

So what is the common purpose that has brought us to this uncommon place? What is it that draws us together? In addition to my belief that we all care earnestly about our patients, it is our ambition that we have in common. Ambition is a charged word. Its very root, *ambit*, suggests equally a praiseworthy desire or an excessive striving. I used to be ashamed of my ambition and for many years tried to suppress it. In fact, in college I would often remind myself of the quote, “Happiness requires four things: creativity, life in the open air, the love of another person, and freedom from ambition.”

I have since taken a stand against the fourth requirement. Ambition is our greatest asset for happiness, but it must be directed to all aspects of our life. I see examples of ambition throughout our class when Tarique or Sara smile at their babies, when Geoff and Allison kiss on their wedding day, when Dave Grayzel breaks into my house to wake me up so I won’t be late for rounds, and even when Carl Marci counsels yet another classmate, “It is okay to be single.”

We must carry this ambition to our professional lives as well. Medicine is experiencing a revolutionary time both in the rate of scientific advancement and its form of administration. But, as John Kennedy said in his inaugural address, “We do not shrink from this



challenge. We welcome it." For revolutionary times are more open to our creative energies than any time of tranquility. Margaret Mead's words resonate, "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it's the only thing that ever has."

So let us be proud of our ambition. Let us be tender and loving partners, strong and loyal family members, nurturing and supportive friends, compassionate and brilliant doctors. And yes, let us be the ones to say that our collective ambition not only saved the American health care system but also created health in our families and communities ❧

Thomas Roberts '97 is spending the year at the University of Cape Town, South Africa on a Rotary ambassadorial fellowship, where he is pursuing a master's in health economics in conjunction with the World Health Organization. He will begin a residency in internal medicine at MGH upon his return in July 1998.

Well and Ill

by David Sloane

IN THE SPIRIT OF THIS DAY OF DISTINCTION, I ask you to consider a choice, one that we all have whether in medicine or not: well and ill.

The two words themselves—their spelling—make the distinction. Both end in "l-l," just as we all share a common end, which medicine may ease or postpone but not conquer. High and low, strong and weak, rich and poor, we are united in the double "l" of our mortality.

The distinction, then, between the two words and in our lives, is elsewhere. "Well" starts with "w-e,"—we. "Ill" starts with "i,"—I alone. This is our choice. Well is the "we" of com-

munity. Ill is the "I" of isolation. Well is the mutual responsibility that transforms a bunch of *Homo sapiens* into people, human beings. Ill is the individual ego that gets no further than itself, using others.

If we work together—dentists, doctors and scientists; teachers and students; artists, businesspeople and clergy; and even politicians and lawyers—it will be well with us. But fragmented into selfish "I"s, polarized against each other, it will be ill.

In the end, "I" can only spell "Ill." "We," when truly responsible for each other, can only spell "Well."

I commend this word "Well" to you today. Write it in your day planner, type it into your palm-top computer, carve it upon your heart. See it when you read, examine and study; hear it with your stethoscope; feel it whenever you touch and are touched. Think of it. Speak of it. Act of it. When you rise up, when you lie down, and when you rise up again because you just got beeped.

David Sloane '97 is an intern in internal medicine at Beth Israel Deaconess Medical Center.



Alumni Day



"ALUMNI DAYS ARE ONE OF THOSE events in life that get better with age," pointed out Suzanne Fletcher '66, outgoing president of the Alumni Council. And it's a good thing homecomings are heartwarming, because it was chilly outside the tent.

This year's was also a truly historic event, an opportunity to celebrate the passing of the torch from one dean, Daniel C. Tosteson '49, to the next, Joseph B. Martin. Such a transition has happened fewer than 20 times in the 215-year history of Harvard Medical School.

Class gifts were also given in historic amounts. Edmund Cabot '72 presented the largest gift ever received from a 25-year reunion class, \$265,567, in the form of an endowed scholarship to be known as the Class of 1972 Scholarship. This will be a new way to remember what Cabot described as "one of the most turbulent classes" in the school's history, having matriculated in 1968. John Duggan '47 presented the 50th reunion gift, which was growing in thousands by the hour and was at a record-breaking \$511,479 by 9 AM that morning (up to \$549,216 as we went to press). He introduced two others at the podium—John Shea '47 and Marvin Slesinger '47—who he said embodied the principle that guided him as class agent: "If something is worth doing, it is worth giving to someone else to do."

For the first time, an Harvard Medical Alumni Award for Excellence in Mentoring was given to honor a faculty member. From over 50 nominations from members of reunion classes, Ronald A. Arky, Charles Davidson Professor of Medicine and master of the Peabody Society, was chosen and presented with a crystal piece to commemorate his award.

Suzanne Fletcher then turned the gavel over to the incoming president of the Alumni Council, Robert S. Lawrence '64, who presented her with a token of appreciation. Before the business meeting portion was officially

closed, Lawrence also gave a certificate to Dean Tosteson to thank him for "a wonderful period of leadership, of friendship, and of great inspirational pathfinding for the Harvard Medical School."

Before starting the symposium, Daniel Federman '53 pointed out that Ron Arky holds the Charles Davidson chair and that Davidson was in the audience, illustrating "the continuity of mentoring."

In the New Pathway tradition, where teachers are students and students are teachers, the Alumni Day program—"A Tale of Two Diseases: Coronary Heart Disease and Tuberculosis"—took the form of six short presentations with plenty of time for audience discussion. Participants took a look at what had happened in the past 50 years in medicine, using the two diseases as examples.

"The yearbooks are wonderful bits of sociology," said Federman, in seguing to the first speaker from the 50-year reunion class. "The Class of 1947 was all male, little rectangular boxes with white faces, neat ties and jackets." Tuition was \$400 when the class started, Sidney Burwell was dean, 37 percent of the class took rotating internships, and they dedicated their yearbook to Fuller Albright.

He then introduced Richard Ross '47, a cardiologist and former dean of Johns Hopkins, who talked briefly about what he had learned about myocardial infarction at HMS 50 years ago. There wasn't much that could be done for patients then except make the diagnosis, treat complications, and insist on bed rest. The electrocardiogram was the only technology available.

In 1947 the death rate from tuberculosis was 33 per 100,000 Americans and 48,000 Americans died of TB. Morton Swartz '47 was called upon to discuss what his class learned about TB at HMS and he fulfilled his assignment in thorough detail.

To begin a discussion with alumni in the audience, Federman commented

about the anxiety that many students felt about the risk of infection 50 years ago, some leaving medical school or training to receive prolonged care in a sanitarium. John Shea '47, an ENT in Tennessee, reminded Swarz about Professor Jackson calling TB the captain of the men of death and asked him, "Didn't you attend that lecture?" The laughter continued when Federman pointed out that the program was about to turn to an HMS class that didn't attend any lectures, so a few missed lectures didn't seem so daunting!

Philip Goldsmith '67 mentioned that the unifying theme of the two diseases was prolonged bed rest, in common with almost all diseases then. "Since the first principle is 'do no harm' and since we know that prolonged bed rest did in fact do considerable harm to many people, a few of us were wondering what we might be doing today that when we look back in 50 years we'll say, wow, that was a dumb idea."

Federman continued his moderation and set the stage for 25 years ago. In 1972 things had changed dramatically, he told the audience. Another war was very much on people's minds, the Vietnam War. "Student protest, divisiveness within the class, and the changed ecology and sociology were very dramatic." This class's dominant yearbook theme was a strike "when they didn't attend classes, didn't submit to planned teaching, and introduced self-education." Many marched in strikes around town and Dean Robert Ebert marched with them. Tuition was \$2,750, there were 14 women in the class, and in the yearbook, the class urged that more women be admitted and mused that someday perhaps Harvard would have as many as 35 percent women in the class. (In this year's graduating class, Federman pointed out, women were 46 percent of the class, and in the current second- and third-year class there are more women than men.)

What Patricia Come '67 learned

about cardiology 25 years ago came in part from Richard Ross's chapter in *Harrison's*. Though they had more treatment options than when Ross was a student, therapies and technologies that have been developed over the more recent 25 years have vastly improved outcomes.

Carl Nathan '67 first quipped that with his degree in question, perhaps he was called back in front of an audience of physicians and two deans to prove that he remembered something from that period. Not much was known about lymphocytes when he was a medical student 25 years ago. And by then TB was no longer the leading cause of death—at least in the United States. TB didn't have its own chapter nor was it even covered under bacterial diseases in their standard pathology texts at the time, he pointed out.

Then it was back to the audience for discussion. Larry Phillips '67 asked when in the evolution of the concept of preventive cardiology did coronary artery disease emerge as preventable. Answers varied from as early as the fifties to more like the mid to late seventies when the seminal Framingham study began to publish results.

Oglesby Paul '42 reminded the audience that Paul Dudley White in

1932 first began to talk about the importance of exercise. As for smoking, he cited a 1954 study in which the authors intended to discuss cancer and smoking and showed for the first time that coronary heart disease was much more common in the smokers. "As pointed out," he continued, "the hypertension story came from Framingham, and the lipid story goes way back. I think the preventive story really goes back over 60 years and Harvard can have some pride in what it contributed."

Henry Work '37 stood up to say that one month ago he had had a coronary angioplasty, was sent home with a "magical thing" called a stent, and was told he could drive the next day. "So I'm glad you've made this progress. I'm here, and I've even been to San Diego since then."

Two graduates of the Class of 1997 were supposed to speak but one didn't show, so Michael Steinman '97 volunteered to speak about both diseases—an example, said Federman, "of the ever-readiness of our graduates to talk about anything—and of course the universality of content in the curriculum." Steinman contrasted what and how he learned about the two diseases: he didn't see much TB on the wards

initially, until he sought out populations where the disease has resurged in this country, and particularly when he went to Botswana on a Paul Dudley White fellowship; in contrast he had a great deal of exposure here to coronary artery disease, its treatments and technologies.

As discussion reensued, Gerald Keusch '62 commented on his experience five years ago in the Congo, formerly known as Zaire under the Mobutu regime. There was only one TB hospital in the city for those who couldn't afford to get care in another country and it only had the sputum smear diagnostic test. If a person tested positive, he could get into a government program but the cost was the equivalent of two months' wages. If too poor, there was no other option than to go home to a household full of people. "If he wanted to design a program to spread a disease, Mobutu couldn't have done a better job."

Another foreign traveler described going to Pakistan for five years where he had expected primarily to see infectious diseases. Though he did see a great deal of infectious disease, the dominant medical problem was ischemic heart disease. Federman added that the World Health Organization now projects that in next 50 years the so-called Western diseases—stroke, ischemic heart disease and cancer—will be the dominant diseases throughout the world.

Robert Lawrence '64 rose to say that 25 or 50 years from now he predicts we will look back and wonder how we could not have paid more attention to the problems of global warming, population explosion, shortage of water, contamination of the biosphere and loss of species. "I know that Harvard has developed a strong interdivisional environment program and wondered if someone could say a word about such efforts, as we are in



Alumni Day photos by Ilene Perlman

Suzanne Fletcher '66 hands the presidential gavel to Robert Lawrence '64.

the midst of a real ticking time bomb."

Anna Kadish '67 commented about work done on the diagnosis of TB at Einstein, where she is on staff. Whereas it used to take weeks to diagnose TB, now it can be done in a matter of several hours, which will have a major impact on prevention.

Jape Taylor '47, who has spent many years in Africa, pointed out that the United States has not taken responsibility for some of its actions. "Mobutu was our client for 32 years. More to point, regarding coronary artery disease, we are making no effort to slow the spread of tobacco to the developing world. In fact, we are encouraging our corporations to export it and we continue to make money from it."

Reid Pitts '67 countered that we may not be able to slow the spread of tobacco or AIDS, but "we certainly can practice more responsible medicine by spending health care dollars on things that make a difference."

Next came the Passing the Torch segment of the morning when alumni could reflect on Dean Daniel C. Tosteson's achievements and hear from the new Dean Joseph B. Martin for the first time. First, two alumni and faculty members—Philip Leder '61, John Emory Andrus Professor of Genetics, and Peter Howley '72, George Fabyan Professor of Comparative Pathology—highlighted some of the dean's accomplishments. Then Federman introduced the mystery guest of the day (who was probably not a mystery to anyone present!) by saying that Dan Tosteson had come back to Harvard Medical School as dean with the idea of accomplishing three things:

- reforming medical education
- strengthening the basis of science
- strengthening the resource base on which the school's programs rest.

"Although he won't say it, everyone else can," declared Federman. "He accomplished everything he set out to do." Tosteson was treated to a standing ovation as he got up to speak.



Photo by Liza Green

Colleagues for 20 years.

Tosteson returned the favor and singled out Dan Federman for special recognition. Federman has served HMS in many ways, he said, leaving Harvard only briefly to serve as chair of medicine at Stanford in the early seventies, but then accepting Tosteson's invitation to return as dean for students and alumni when he was building his new administration. (In the mid eighties he became dean for medical education.) "He is a gifted, eloquent and experienced teacher. His eloquence is, in fact, legendary. He is a remarkably clear and realistic analyst of educational problems. He has an exceptional capacity to express complex problems succinctly, and he actively teaches now in the genetics, embryology and reproduction course Phil told you about. His great familiarity with students over the past 30 years makes him perhaps the best known faculty member to our alumni." Dean Tosteson then presented Federman with a gift in gratitude for their partnership of the past 20 years, an inscribed crystal octron.

After updating alumni on the past year's events—just as if it were any other year—Dean Tosteson then introduced Joseph B. Martin and asked the assembled alumni to join him in welcoming him to the leadership of Harvard Medical School. He too was greeted with a standing ovation.

Dean Martin began by talking about his tie, which he purchased to symbolize his transition from UCSF to Harvard. In an attempt to bring together Cal blue with Stanford red (representing their merger) with Harvard crimson, he was wearing a blue and gold and crimson tie.

When Martin finished his speech, Federman pointed out that Martin had already been granted an honorary master's degree at Harvard when he was head of neurology. "Far more precious, far more seldom given, is honorary membership in the Harvard Medical Alumni Association!" He conferred that honor on the new dean.

And in the final moment of the day, as "a universal symbol known throughout the civilized world of Harvard Medical alumni," he presented the new dean with a Harvard Medical School tie.

Tale of Two Diseases

50 years ago

Not Much To Be Done

by Richard S. Ross

WHEN DAN FEDERMAN FIRST ASKED me to speak, he said I would have five minutes to tell you what I learned about myocardial infarction at Harvard Medical School 50 years ago. You can't possibly do justice to any subject, let alone the most important disease of the century, in five minutes. This was my initial reaction, but after a little reflection, I realized that what I learned about this subject 50 years ago probably could be presented in a very short time. He gave me seven minutes and I signed on.

The only clinical science relevant to myocardial infarction, which I can remember, was the work of Monroe Schlesinger in pathology at Beth Israel. Some of you will recall that Schlesinger made postmortem coronary arteriograms by injecting the coronary arteries with a lead-containing agar solution. After injection, the heart was dissected, unrolled and spread out on a piece of X-ray film. The resulting radiograph provided a detailed map of coronary circulation. Schlesinger correlated the patient's history with the postmortem arteriograms. He told us about the patient's episodes of pain and showed us the occlusions and areas of infarction responsible for the symptoms. This exercise of clinical pathological correlation made a great impression on me.

In retrospect, it is significant that all I can remember on the topic of

myocardial infarction is from the pathology laboratory because that was where the action was. There wasn't much to be done for the living patient with this disease except make the diagnosis, document the natural history and treat any complications. The management of this condition was guided by that ancient principle, "First, do no harm."

The typical uncomplicated patient was given morphine to control pain and allowed to rest. No blood was drawn, no intravenous started, and the rectal exam was deferred. Effort associated with all bodily functions was minimized. Nurses fed the patient a liquid diet and later a soft diet, and a great deal of attention was devoted to the management of the bowels. Patients were on bed rest in the hospital for four to six weeks because that was how long it took for the heart to heal. At an appropriate point during the second to fourth week the patient was allowed to "dangle"—an archaic term used to describe the strenuous act of hanging the legs over the side of the bed for a few minutes. This was a prelude to graduating to a chair and using a bedside commode.

This obsession with rest and avoiding all stress must have originated from the physician's knowledge that patients with myocardial infarction frequently died suddenly. Other complications, such as pulmonary edema,

heart block or even shock, could be treated, but the physician was powerless when dealing with a patient whose heart had stopped beating.

Now myocardial infarction is a high-technology disease. Fifty years ago high technology was the electrocardiogram. The state-of-the-art machine was the Cambridge string galvanometer, which produced an electrocardiogram on photographic paper that had to be developed before it could be interpreted.

The diagnosis of myocardial infarction was often made under the red light of the photographic dark room as the tracing slowly emerged in the developing solution. It is hard to believe, but true, that young physicians could get excited about an electrocardiogram. Spirited discussions were held about the significance of Q waves and the meaning of the "cove plane" T wave.

Exciting and promising new developments in the late 40s were precordial leads which supplemented the standard three-lead electrocardiogram. There was also a primitive device that enabled an observer to see the EKG in real-time. On the therapeutic horizon, anticoagulation therapy with dicoumarol was under active investigation.

But perhaps the best way to characterize the status of myocardial infarction 50 years ago is by listing all the

things that were not available.

Fifty years ago there were no cardiac enzymes to confirm the diagnosis, no direct writing EKG machines and no oscilloscopic monitors. Closed chest cardiac resuscitation and electrical defibrillation were not yet available and there were no coronary care units. Quinidine was the only anti-arrhythmic drug. There were no pacemakers. There was no coronary arteriography, no thrombolytic therapy, no angioplasty and no coronary bypass surgery.

It's a wonder that somehow 80 percent of patients survived under these primitive circumstances. ❧



Richard S. Ross '47 is dean emeritus, professor of medicine (cardiology), Johns Hopkins Medical School.

50 years ago

Captain of Death

by Morton N. Swartz

WHEN WE ENTERED HMS OUR knowledge of tuberculosis was limited to famous individuals such as Keats and Chopin who had died of the disease or from reading *The Magic Mountain* by Thomas Mann, but we soon learned quite a bit more in extensive detail.

In our bacteriology course Howard Mueller, department chairman, lectured on the tubercle bacillus. Rene Dubos lectured on chemotherapy and antibiotics, but consideration of antimycobacterial drugs was not included since the first such drug (streptomycin) was not identified until 1944, and clinical trials were not completed until 1947, the year we graduated.

We learned about the epidemiology of tuberculosis: that there were 1.3 million to 2.6 million cases of tuberculosis in United States at the time and about 150,000 new cases annually

(contrasted with 21,000 new cases in 1996). Tuberculosis was considered primarily a "social disease" spread by coughing and spitting in crowded living conditions.

Three species (*M. tuberculosis*, *M. bovis*, *M. leprae*) were the only known human pathogens, but a few other species like *M. avium* in birds and saprophytic species like *M. pblei* had been described. *M. tuberculosis* was difficult to grow, requiring four weeks or longer on the available media. It was a difficult organism to stain, requiring the special Ziehl-Neelsen acid-fast technique.

M. tuberculosis infection was thought to be acquired via the respiratory route, whereas *M. bovis* infection was transmitted by ingesting infected cow's milk. At that time distinguishing *M. tuberculosis* from *M. bovis* was based on animal inoculation.

Our lectures on the pathology of tuberculosis were given by Burt Wolbach, department chairman. We learned that the initial response to *M. tuberculosis* was an accumulation in the alveoli of mononuclear cells containing phagocytosed *M. tuberculosis*, their later fusion to form Langhans giant cells, and the development of a surrounding zone of fibrosis. The mononuclears in the center of the granuloma subsequently underwent coagulation necrosis ("caseation"). The cause of caseation was considered a mystery at the time: was it due to tissue asphyxia or to an as yet unidentified toxin elaborated by the tubercle bacillus?

From areas of caseation, bacilli could enter blood vessels and spread to other organs or become widely distributed in military tuberculosis. Softening of a caseous focus might result in its release into the bronchial tree, eventuating in tuberculous bronchopneumonia.

We learned much about the pathology of tuberculosis in various organs besides the lung: scrofula, arthritis, osteomyelitis (including Pott's disease), Addison's disease, meningitis, peritonitis and pericarditis. We learned that so-called "idiopathic" pleural effusions were often due to extension of tuberculosis from underlying, small lung foci.

Much attention was given to attempts of the host to develop reactivity (a form of acquired resistance to infection). The Koch phenomenon was described to us. When an uninfected guinea-pig was injected subcutaneously with *M. tuberculosis*, 10 to 14 days later a nodule appeared, ulcerated, the regional lymph nodes caseated, and generalized infection ensued. In contrast, in an already infected guinea pig, a similar inoculation was followed in one to two days by necrosis of the site and rapid healing without lymph node caseation and dissemination of infection. No identifiable circulating antibody response occurred.

The use of old tuberculin or O.T. (and its purified derivative, PPD) was discussed because of its value in identifying individuals with prior, often inapparent, infection due to *M. tuberculosis*. Koch had prepared O.T. from a culture of *M. tuberculosis*. Skin testing could be performed by scratch test or the intracutaneous (Mantoux) test. Approximately 50 percent of the U.S. population at the time was infected with tubercle bacilli. The prevalence of infection varied with geographic location, socioeconomic strata and age.

We were taught that genetic factors might have a role in host susceptibility to tuberculosis, and the increased susceptibility of African-Americans and variability in susceptibility amongst various white races were cited as evidence. However, the confounding roles of crowding and exposure were not carefully worked out.

Distinction was made between the "childhood form" (initial exposure) of tuberculosis and the "adult form" (re-exposure) of tuberculosis. In the former, the initial focus was usually located subpleurally in the mid-lung zone (Ghon lesion). Lymphatic spread of infected mononuclear cells resulted in infection and caseation of hilar nodes. Infection was usually contained in these sites by the development of tuberculin hypersensitivity. Occasionally it spread from the regional lymph nodes into the bloodstream and seeded a variety of small foci in other organs where they could be contained and remain quiescent for years.

We were taught that tuberculin hypersensitivity acquired from earlier infection played a role in response to reinfection. Breakdown of a long-standing caseous focus with discharge of *M. tuberculosis* into the bronchial tree could redistribute it and cause a hypersensitive reaction. However, our lectures emphasized that most reinfection ("adult" form of tuberculosis) was infection acquired from a new external source.

Fifty years ago exogenous reinfection could not be proven since labora-

tory methods were not available to distinguish between isolates of *M. tuberculosis*. Over subsequent decades most "adult" upper lobe tuberculosis was thought to represent endogenous reactivation at a Simon focus of post primary dissemination.

In medicine we were taught to recognize the symptoms of tuberculosis such as late afternoon fever, night sweats, weight loss, cough, hemoptysis, pleuritic pain. In physical diagnosis and in our clinical rotations, emphasis was placed on the examination of the chest in the diagnosis of pulmonary tuberculosis: a lag on inspiration on the affected side, flatness on percussion over the lower lung and absent tactile fremitus from a pleural effusion, dullness over Kronig's isthmus at the lung apices, and post-tussive crepitant rales.

Radiologic findings, we were taught, were often helpful in directing attention to the possible diagnosis for tuberculosis. These included the presence of the primary Ghon complex, tuberculous pneumonia, cavitary tuberculosis or miliary disease.

As aids in diagnosis we learned the importance of a positive tuberculin skin test in a child or a recent conversion in an adult and the value of sputum examination by direct Ziehl-Neelsen smear, or if negative, by concentration of a 24-hour specimen of sputum or gastric aspirate. Concentrated sputum or gastric aspirate specimens were then inoculated into guinea pigs for bacteriologic confirmation.

Once the diagnosis of active pulmonary tuberculosis was made, medical therapy consisted of rest, initially bed rest, often in a tuberculosis sanitarium. Collapse therapy was used to rest the involved lung when lesions progressed, for cavitary lesions, or when bed rest alone failed to produce improvement. Collapse therapy included artificial pneumothorax, pneumoperitoneum and thoracoplasty. Lobectomy was carried out in some patients, usually with localized,

chronic nonresponding lesions.

We were taught about attempts at preventing tuberculosis through immunization with BCG (*Bacillus Calmette-Geuerin*), a strain of *M. bovis* that had become less virulent on repeated transfer on laboratory media. We were told that BCG vaccination was used in Europe but not in the United States, where this approach was not viewed as promising at the time.

In sum, 50 years ago we were taught the basics of tuberculosis: the special microbiology of *M. tuberculosis*, the unique type of tissue response induced, the differences between "primary" and "reinfection" tuberculosis, the differences resulting from inhalation and ingestion exposure, and the organs involved in post-primary dissemination. We learned the clinical features of tuberculosis and the means of establishing the diagnosis.

It was left to subsequent generations of medical students to learn about other pathogenic mycobacteria, the role of natural immunity, T-lymphocytes in host defense, the use of molecular techniques for diagnosis, and the value of multiple antimicrobial agents developed in the past 50 years, as well as the subsequent problems of multiple antibiotic resistant strains of *M. tuberculosis*. ❧

Morton N. Swartz '47 is professor of medicine, Harvard Medical School; chief, Jackson Firm of Medical Services, MGH; chief emeritus, Infectious Disease Unit, MGH. He would like to acknowledge his classmate Hermes Grillo '47, "whose detailed lecture notes have served to stimulate my flagging recall of what our class was taught about tuberculosis 50 years ago."

25 years ago

Understanding the Puzzle

by Patricia C. Come

TWENTY-FIVE YEARS AGO OUR camels, those horses put together by committees, were chock full of information. Brief lecture outlines supplied by our professors were greatly amplified by the verbatim transcripts of their words, mimeographed, collated and distributed by us. (Very different from the improved learning techniques of the New Pathway.) Yet, learn we did, much to the credit of some wonderful mentors, exemplified by the late and well-loved A. Clifford Barger. The basic tenets of cardiac anatomy, physiology and pathology have largely remained steadfast. They continue to serve as launching pads for the incorporation of vast new knowledge resulting from scientific advances, particularly in molecular biology and genetics, not even dreamed of 25 years ago.

The practice of cardiology has evolved considerably. Let's take the example of acute myocardial infarction (MI). Unlike numerous other diseases—including AIDS, toxic shock and Legionnaire's disease—MI was a recognized clinical entity back then. Indeed, an estimated 374,000 patients were hospitalized with that diagnosis in the United States in 1972. As is still true today, a positive diagnosis required two of the following: a characteristic clinical history, serial electrocardiographic changes, and serial changes in the serum levels of enzymes released from damaged myocardium.

We relied on measurements of

serum glutamic-oxaloacetic transaminase and lactic dehydrogenase. Creatine kinase (CK) analyses were just becoming available. We did not have the more specific assays for detecting CK MB, troponins I and T and myoglobin. Echo and radionuclide imaging were in their early infancy, and I must admit that it took a good deal of imagination to glean information from them.

Then, as now, patients were admitted to coronary care units with bedside or centralized arrhythmia monitoring and the capability to perform prompt defibrillation. I remember that most patients with warning arrhythmias—greater than 5 ventricular premature beats per minute, multifocal or consecutive ventricular premature beats or those with the R on T phenomenon—received IV lidocaine. We have since learned that such prophylaxis is unnecessary in a well-monitored setting and may even be dangerous. And, our fairly common practice of prescribing chronic, prophylactic antiarrhythmic therapy for postinfarction ventricular ectopy was largely abandoned after the CAST study in 1991 and 1992 documented increased mortality, despite suppression of ambient ectopy, with type I agents.

Bradycardia or heart block, if sufficient to cause hypotension or contribute to congestive heart failure, was treated with atropine, isoproterenol (we weren't aware then that it might increase the size of infarction) or

transvenous pacing. Supraventricular tachycardias were treated with IV digoxin or ouabain, countershock or a combination of the two. Beta blockers and calcium blockers were not used. For treatment of pulmonary edema, we had only to remember what the initials of the mnemonic "MOIST DAMP" stood for—morphine, oxygen, intermittent positive pressure breathing, sit-up, tourniquets, digoxin, aminophylline, mercurial or other diuretics and phlebotomy. Some of these have stood the test of time; others are relics of the past.

For cardiogenic shock, fluid was given if the central venous pressure was low and the lungs clear. Otherwise, norepinephrine was the agent of choice. Human trials of dopamine were just beginning. Intra-aortic balloon counterpulsation was also used, generally, as is still true today, with little efficacy. Rarely did patients undergo emergency surgical revascularization or surgical repair of a ruptured septum or papillary muscle. Transplantation was not an option.

Recuperation from MI was a long process, with severe restriction of activity. In his chapter in our clinical bible, the 1970 edition of *Harrison's Textbook of Internal Medicine*, Richard Ross summarized the recommendations concerning convalescence: complete bed rest for the first five days; footboards and instructions to press



against them ten times per hour to prevent deep venous thrombosis of the legs; a liquid diet, given in six small feedings; and on days five to ten, permission to feed themselves and introduction of solid food. Sitting at the edge of the bed was permitted on days 10 to 14 and chair sitting allowed on days 14 to 21. The total length of stay was three to four weeks. As a result of such prolonged inactivity, many of our patients suffered from postural hypotension, constipation and deep venous thrombosis and pulmonary embolism.

The in-hospital mortality rate for acute myocardial infarction was 21.8 percent in 1972. In contrast, in the recent GUSTO trial, 35-day mortality was only 6.3 percent in patients with ST elevation MI who received front-loaded t-PA. What accounts for this large difference? There are five treatment interventions that have been shown in large, randomized, controlled trials to decrease postinfarction mortality. They are beta blockade, aspirin, thrombolysis, angiotensin converting enzyme (ACE) inhibition, and lowering of low density lipoprotein levels. None of these were used for MI in 1972.

The beneficial effects of beta block-

ers in lowering acute MI mortality were demonstrated by the ISIS study in 1986. Earlier studies, in 1981 and 1982, had proven the value of long-term post-infarction beta blockade. Regarding aspirin, ISIS II in 1988 reported a 49 percent decrease in non-fatal MI, a 46 percent decrease in non-fatal stroke and a 23 percent decrease in vascular mortality for patients randomized to receive aspirin during infarction.

Nine large randomized trials published between 1986 and 1993 showed that thrombolytic therapy could open the clot-occluded arteries responsible for ST-segment elevation MI and significantly reduce mortality. More recently, PTCA, first used in the coronary circulation by Gruentzig in 1977, has also been applied to the acute infarct situation, producing results equal to or, perhaps, superior to those of lytic therapy. In reports published between 1992 and 1995, ACE inhibitors were shown to decrease mortality and adverse remodelling of the left ventricle when begun either during acute infarction or in the convalescent period. And, finally, the 1996 CARE study has shown a survival advantage for postinfarction treatment even of only mildly elevated LDL levels.

The past 25 years have provided a marvelous journey. We can only guess at what the next 25 years will bring—and most of our guesses will likely be wrong. Much of medical progress is unplanned, a result of serendipity and curious individuals trying to understand the puzzles of nature. We should continue to follow the advice of Tennessee Williams, as he put it in “Camino Real” in 1953, “There is a time for departure even when there’s no certain place to go.”

Patricia C. Come '72 practices at Brigham and Women's Hospital and Harvard Pilgrim Health Care in Boston.



Morton Swartz '47, Carl Nathan '72 and others.

25 years ago

Known But Not Taught

by Carl F. Nathan

I'LL BEGIN BY DESCRIBING WHAT WE were taught about TB and host defense 25 to 29 years ago, to convey the state of the art at that point in our scientific history.

Our beloved textbooks of the time tell the tale. Most alumni will remember Davis, Dulbecco, Eisen, Ginsberg and Wood's *Microbiology*. I seem to have underlined every noun and verb in the 1968 edition. Two texts in one, the book devoted half its thrust to immunology, yet said nothing at all about cell-mediated immunity. The chapter on TB mentioned macrophage activation but had nothing to say about how it arose or of what it consisted.

I used two pathology texts at HMS. Here's what Florey's 1964 edition of *General Pathology* said about lymphocytes: "A cell which exists in the normal animal in such large numbers and which is mobilized into striking local collections in disease might be expected to possess some obvious and important function. However, the only positive activity in which the small lymphocyte is known to indulge is that of movement." From that I learned that ignorance is no impediment to eloquence.

My second pathology text was Anderson's edition of 1966. Leprosy got a chapter, but TB did not, and the chapter on "Bacterial Diseases" didn't mention it. TB was covered under "Lung, Pleura and Mediastinum." There, under the subject of host defense, we were only told that "the chief mechanism of immunity is the increased capacity of mononuclear phagocytes to inhibit the growth of tubercle bacilli." No one knew how.

Finally, our beloved *Harrison's*

Principles of Internal Medicine, of which the earliest edition still in my possession was issued in 1974. Here's what Harrison's had to say about the magnitude of the problem: "Tuberculosis has dropped from the leading cause of death, with over 200 deaths per 100,000 in 1906 to 2.1 per 100,000 in 1971." Nothing told me that this referred only to the United States; it simply wasn't the tenor of the tome or the time to think globally, as René Dubos was then trying to get us all to do.

Now let me turn to what was known but not imparted. It astonishes me how little we learned of the enormous magnitude of the disease or the intense dramas so recently played out in response to it. None of this penetrated the veil of scholarship.

Our books gave us not a clue of what took the lives of *Gone With the Wind's* Vivien Leigh, Frederic Chopin, Arturo Paganini, Emily Brontë, Robert Louis Stevenson, George Orwell or Eleanor Roosevelt. When Bernie Davis's chapter in *Microbiology* told us that TB was "a widespread and grave clinical challenge," we had not a glimmer that the organism was estimated to have killed 1 billion people in the 100 years before Bernie penned the phrase; that tuberculosis was the leading cause of death from an infectious disease, and so remains; or that one person in three carries the tubercle bacillus in their bodies—I'm speaking globally now.

I could not read between Bernie Davis's lines, that he himself had contracted TB while fighting it in the lab of René Dubos at Rockefeller; that his co-worker HMS alumnus Gardner

Middlebrook did so as well, but went on to help develop the Dubos-Middlebrook growth medium so important for the study of tuberculosis; that Dubos had discovered antibiotics from soil organisms and had introduced the concept to Selman Waksman; that Waksman would pursue Dubos's lead and win the Nobel Prize in 1952 for his and Schatz's discovery of streptomycin; that Dubos devoted himself to the study of TB because it killed his beloved wife, Marie Louise; that yet another worker in the lab, Jean Porter, also contracted TB at the bench, and was Dubos's second wife by the time I took the lab across from Dubos's in 1977.

Whence the isoniazid that might have saved so many lives? It was not at HMS, but from Dr. Frank Ryan's recent book *The Forgotten Plague* that I learned about Bayer's Gerhard Domagk, forced by Hitler to decline the Nobel Prize for discovering sulfonamides. He worked through Allied bombardment, standing in the smoking ruins of his lab, dissecting the guinea pigs that revealed to him he had finally identified an effective antitubercular thiosemicarbazone. Domagk survived Allied hail and Nazi hostility to collect his Nobel Prize in 1947, and he went on to discover the antitubercular properties of isoniazid in 1951 while improving on the thiosemicarbazones, a discovery reached simultaneously from other directions in this country by investigators at Hoffmann-LaRoche and Squibb. One of the earliest trials of isoniazid in the United States took place at New York Hospital, where the first Mrs. Dubos had died nine years

before.

In my education about tuberculosis, I'm left with the sense that the HMS of 1972 gave me neither the big picture nor a sense of the myriad personal tragedies and triumphs of which it was comprised. But HMS gave me something that in the long run was more precious to me: the opportunity to work with physician-scientists and become one; to discover as a student with John David and Manfred Karnovsky that T lymphocytes activate macrophages by secreting cytokines; to identify one of those cytokines with Zanol Cohn '53; to introduce cytokines for the treatment of nonviral infectious disease; to help identify reactive species arising from superoxide and nitric oxide as major antibacterial pathways of the activated macrophage; to help clone nitric oxide synthase from macrophages and nitric oxide resistance genes from *Mycobacterium tuberculosis* that may offer a target for new antitubercular agents.

All that is a story from and for another time. My point is that the seeds were planted 25 to 30 years ago, right here in this incomparably fertile patch of land, the Harvard Medical Quadrangle. ❧

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Today

Encouraging Discovery

I WISH I COULD TELL YOU ALL I learned about tuberculosis (TB) and coronary artery disease during my medical education, but unfortunately I've forgotten most of it. What I'd like to do instead is introduce some of the ways in which my classmates and I learned about these two diseases. This is important because it highlights how our medical education was shaped not only by clinical and biological sciences in the formal curriculum, but by social issues and extracurricular exploration as well.

Our education about tuberculosis started slowly. In the first two years of medical school, we had only one lecture on this disease and the organism that causes it. However, many students took the opportunity to obtain additional information on TB and other

diseases. Many of us attended evening forums at the medical school and nearby hospitals to hear of issues in health care for underserved populations. Some students saw more cases of TB by volunteering in health projects serving economically depressed areas of Boston and Cambridge. The formal curriculum also addressed social aspects of disease through the longitudinal Patient/Doctor curriculum.

In these ways, interested students learned about the social and epidemiological aspects of TB and other diseases disproportionately affecting underserved populations. By the time my classmates and I reached the end of our second year, we had some appreciation for these factors affecting the prevention and progression of TB. The only problem was that we had little under-



Phil Goldsmith '67 and
John Wesley '67

standing of how to recognize or treat it.

The lack of formal teaching about TB contrasted with our education about coronary artery disease. We heard many outstanding lectures about its pathogenesis, prevention, diagnosis and treatment, including extensive discussions about the latest advances and controversies in its basic science and clinical management. This was supplemented by lectures and practicums in the Patient/Doctor, preventive medicine and nutrition courses about dietary and lifestyle risk factors, methods of exploring these issues with patients, and providing appropriate counseling.

This thorough exposure to cardiac disease continued into the third and fourth years. We treated patients with acute myocardial infarctions, assisted in cardiac surgeries (well, at least we held retractors), and observed angioplasties. Similarly, during our ambulatory months we evaluated patients for cardiac risk factors, started patients on aspirin and cholesterol-lowering agents and the like.

Our clinical education about TB was less intense. The disease was discussed more frequently than in the preclinical years. After a while, though, TB started seeming like just another "fascinoma": a disease we frequently heard about, but never actually saw. Anyone who came in with respiratory complaints and perhaps a little weight loss soon found themselves in an isolation room—but very few actually had the disease. I didn't see a single case of TB during my core clinical rotations throughout my third and fourth years.

I took a year between my third and fourth years to join a CDC research team studying TB epidemiology in Botswana. As I prepared for this experience by seeking local experts and their patients, I soon found large numbers of cases of TB in Boston. I realized that the reason I hadn't come across any such patients sooner was that I hadn't been looking in the right places. Much of the disease can be found in outpatient settings, rather than on the wards where I had spent

most of my clinical time. Cases were also concentrated in hospitals and clinics that served large numbers of poor and immigrant patients primarily as community institutions, such as Cambridge Hospital and Boston City Hospital (more so than the major Harvard teaching hospitals).

For me, this was the bridge between the social theories we had learned and the presentation and management of real clinical disease. This hands-on experience extended into my work in Botswana, where I saw more cases each day than I had during nearly the entire preceding year, and gained a visceral appreciation for the devastation TB and AIDS are causing in southern Africa.

Although my experience in Africa was an individual one, many other classmates also went abroad to explore the issues and diseases with which we have less exposure at HMS. Still others found these opportunities domestically, by working with the Indian Health Service, and in inner city and rural programs.

Looking back, our formal education was proportionate to our experiences at the major Harvard teaching hospitals—a lot of heart disease and not much TB. Once we stepped outside this world, as close as Roxbury or as far away as Botswana, priorities seemed to change. As someone interested in TB, I would have liked to have had more education on this subject in my courses and clinical rotations. But I'm sure that another student with an interest in inherited disorders of lipid metabolism might have felt the same way.

But while the curriculum wasn't perfect, HMS offered something as important as its formal teaching to my professional education and development: the encouragement and resources to seek my own learning experiences. The fact that students like me sought experiences outside the standard plan should not be interpreted as an indictment of education on the Quadrangle or the teaching hospitals—rather, I view this as one of



HMS's greatest strengths.

I hadn't intended to wax philosophical. After all, I was just asked to give a short talk about what I learned about TB and coronary artery disease during my years here. But, as I was thinking about what to say, I realized that the process by which I have learned these past few years has been as important to me as the facts and skills acquired.

I don't mean to downplay the very real and often intense role of our basic science and clinical teaching, which clearly formed the backbone of our medical school experience. Nonetheless, I think I can speak for most of my classmates in saying that the other ways in which we learned about tuberculosis, coronary artery disease and everything else—including the social medicine curriculum, extracurricular pursuits and independent research and clinical work—have played a major role in how we will approach medicine as we move forward in our careers. ❧

Michael A. Steinman '97 took a year off medical school to study TB in Botswana as a Paul Dudley White fellow. He is a resident in primary care internal medicine at the University of California, San Francisco.

Passing the Torch

Remarks by Philip Leder

I'M PLEASED TO HAVE THE OPPORTUNITY to comment on one of Dan's most important legacies—an element of the torch being passed from one deanship to another—the New Pathway.

Many of you have heard of the New Pathway, and some of you may have participated in a New Pathway session at one of your reunions. Doubtless some of you may even have grumbled about what at first blush might appear to be a scheme to teach a watered-down version of the medical sciences that all of us learned at such great effort and (some of us) promptly forgot.

Let me spend a moment telling you what the New Pathway is, what it isn't (which is probably more important), and a bit about how it works. I can do this best by telling you how the New Pathway has influenced the new course in Genetics, Embryology and Reproductive Biology which our department has offered (with a great deal of interdepartmental help) in both the old and new formats.

The New Pathway—now built into bricks and mortar in the Medical Education Center—is a case-based learning exercise, which involves lectures, a programmatic presentation of material, conferences and clinics, but most importantly, tutorials consisting of seven students and a faculty tutor who meet for about two hours, three times a week.

The tutorial starts with an actual case, linked to material being presented in other learning formats. The major responsibility for analyzing the case, gathering information, and establishing a learning agenda falls not to the tutor or the director of the course, but actually to the students themselves. Of course, there are guidelines and

goals to this process, but it promotes team learning and collaboration. It really imitates the way you gain information after you have gone through a formal curriculum—by getting on the telephone or buttonholing a colleague, going to the library, getting on the Internet, establishing a learning agenda, taking a course or calling upon a list of resident experts, scientists or clinicians actually working in the field.

It is an extraordinary exercise, but not an exercise in watered-down science. It is a rigorous program. Dan's interest and his standards in science would never tolerate such a dilution, and, of course, neither would his faculty. You may get the impression that the New Pathway involves some elements of "touchy-feeliness" because we do emphasize sensitivity and compassion, not just to our patients, but also to our colleagues, fellows and classmates.

We feel it really works. The criteria I use to draw that conclusion are not National Board scores—which are as good as they've ever been—but rather the spirit of enthusiastic learning that permeates the class. Let me compare it to the kind of curriculum from which most of us emerged: lecture after lecture, in almost numbing succession. It worked, but perhaps it was not the best way to stimulate learning. The New Pathway manages to create a degree of enthusiasm and interest which I, as student or teacher, had not seen before.

The New Pathway format also allows us to accommodate knowledge as it moves from the bench and begins to influence what we do at the bedside. In the course of the decade or so that the New Pathway has been in place, we have seen extraordinary progress in

our understanding of the genetic and molecular bases of a variety of diseases. I was particularly gratified, as I looked over an old syllabus from the beginning of this period, to see that many of the questions we posed to earlier classes have been answered. Specific genes and their products have been identified and have been used to understand, for example, Huntington's disease, achondroplasia, and Duchenne's muscular dystrophy. The new knowledge and the powerful genetic tools that have been used in these discoveries are all a part of the New Pathway.

Not only have we seen a revolution in the way we teach medicine, the revolution continues in the way we do the science that informs medicine. Genetics has been a big part of that revolution, both in education and science. Dean Tosteston created these opportunities during his extraordinary tenure. Dean Joseph Martin now brings to his new responsibilities the same concern for education and the sciences basic to medicine. It is a wonderful time in education and in science. And well it should be, for the two go hand-in-hand.

Dan, thank you so much. Joe, welcome. ❧

Philip Leder '61 is John Emory Andrus Professor of Genetics, Harvard Medical School.

Remarks by Peter M. Howley

I'LL BEGIN WITH A QUOTE FROM Louis Pasteur who said, "Science is the torch which illuminates the world." Dean Tosteson, it is clear from your record of accomplishment and from the changes made during your tenure at Harvard Medical School that you share this vision.

Today, as we anticipate the passing of the torch, we reflect on this vision and on the incredible changes that Dean Tosteson has affected here at Harvard Medical School. We have heard today from Philip Leder about the remarkable success of the New Pathway. There have been other changes, however, that you have made at Harvard Medical School that have been just as profound.

You have reorganized the basic pre-clinical science departments on the Quadrangle around scientific research disciplines rather than around the traditional subjects of a medical school curriculum. Your creation of the New Pathway and the teaching societies provided this opportunity. You created two new departments: the Department of Genetics and the Department of Cell Biology. You combined others.

You have completely renovated the physical plant of the Quadrangle laboratory and teaching spaces, and have significantly expanded research space at Harvard Medical School by constructing the Warren Alpert Building and creating the Harvard Institutes of Medicine. Today, science at Harvard Medical School is in no way limited by a lack of facilities, and it has never been stronger.

Your commitment to the basic sciences has resulted in significant cultural changes on the Quadrangle, which now make Harvard Medical School the pre-eminent center for biomedical sciences in the world. The impact of changes made during your tenure can be measured in a number of ways. Your faculty recruitment record over the past several years in the basic sciences is matched by no other institution. The PhD graduate programs at Harvard Medical School have grown in size and reputation. When you arrived 20 years ago, there were 148 graduate students at HMS—today there are 480 graduate students. The graduate program in the Biological and Biomedical Sciences—the BBS Program, which joins all of the pre-

clinical departments on the Quadrangle into a single graduate program—is the top-rated graduate program in the biological sciences in the United States. Our PhD graduate programs are among the top few in a study by the National Research Council as well as by the *US News & World Report* survey.

HMS now attracts the top graduate applicants nationwide, and of those offered admission, over 55 percent will enroll next year. The chief composition of our top graduate school applicants are from MIT, Stanford and UCSF. On a head-to-head basis with these schools, most applicants with a choice between HMS and one of these other schools have chosen HMS for next year.

Under your leadership the torch has shone brightly. You have kept it well fueled. As a faculty member and an alumnus, I want to express my deep appreciation for your vision and for your remarkable job in promoting and advancing science here at Harvard Medical School. ❧

Peter M. Howley '72 is George Fabian Professor of Comparative Pathology, Harvard Medical School.

Peter Howley '72, Joseph Martin, Daniel Tosteson '49 and Philip Leder '61.



The Last Hurrah

THAT NAMELESS MEDICAL

Education Center, so integral to the vision of the New Pathway method of learning, is henceforth to be known as the Daniel C. Tosteson Medical Education Center. Tosteson was feted June 12 with a dinner, eloquent words, a bronze bust, portrait unveiling, a tribute booklet, and the dedication of a building in his name. We shall not likely forget Dean Daniel Charles Tosteson '49!

"Dan has thrived in a way that is not likely to be rivaled and surely not surpassed," said Neil Rudenstine, president of Harvard University, at the celebratory dinner in Tosteson's honor. "Harvard has helped transform medical education, thanks largely to Dan Tosteson."

There were many other expressions of his achievements, conveyed in person that day, published in the tribute booklet, or captured on a commemorative video. Many faculty members told of how much stronger the school is from both an educational as well as research perspective.

"Dan has implemented a vision for science at Harvard Medical School

that is without parallel in this century," said Philip Leder '60, John Emory Andrus Professor and chair of the Department of Genetics. "Confronted with extraordinary developments in genetics, recombinant DNA technology and cell biology, he determined that the medical school would not be a spectator but a front-line participant in creating new knowledge essential to medicine When I came here in the early 1980s, the physical plant was in dire need of renovation, and though intellectually the best science was already being done, it was the best science of the previous decade. There has been an astonishing physical and intellectual renovation."

Tosteson's vision of what he wanted to accomplish was frequently mentioned. "I think of Dan as having more visions than Mother Theresa," said Joseph Coyle, Eben S. Draper Professor and chair of the Department of Psychiatry. "He helped transform medical education at Harvard and in the United States."

Most of the original group of deans that Tosteson recruited back in 1977 are still with him. They cited the

administrative style that enabled his vision for change to become a reality. "He is amenable to disagreement and indeed, the thesis/antithesis argument is what eventually gets to the final product," said S. James Adelstein '53, executive dean for academic programs and the Paul C. Cabot Professor of Medical Biophysics. David Bray, executive dean for administration, likened him to a Model T, not fast but persevering, constantly moving forward on an objective.

As his staff wrote in the tribute booklet: "He used an analytical approach as he pursued his vision, not by rhetoric or a flamboyant personal style, but rather by using the power of persuasion. His courage, patience and perseverance made it possible to experiment, take risks and overcome barriers."

What makes a successful dean of such a large and diverse school, mused Derek Bok, the Harvard University president who recruited Tosteson? "Even without the powers that other CEOs have—setting budgets and ordering people around—he was extraordinarily persistent and persuasive in focusing on certain problems and going after them."

"He has a greater interest in being right, that is doing the right thing, and a lesser interest in being popular, than almost anybody I've known," said Dean for Medical Education Daniel Federman '53. And in another context: "Harvard Medical School has had great deans in the past, but in this new, complicated era, his accomplishment is in showing what a dean should be."

The charge from the dean to develop and launch an experimental curriculum generated excitement and energy that is felt on the Quadrangle to this day. Students feel it too because as Federman pointed out: "A central aspect is Dan's extraordinary respect for the student."



Neil Rudenstine and
Daniel Tosteson '49.



photo by Graham G. Ramsay

Future generations of Harvard Medical students will study in the Daniel C. Tosteson Medical Education Center. They will pass the illustrious line-up of busts that overlook the atrium and that now includes Tosteson's. As Tosteson commented after the bust was unveiled: "To the extent that I live in this bronze, there is no place I would rather be than with the students of the Harvard Faculty of Medicine in this place." ❧

Ellen Barlow

Promise of the Future

by Joseph B. Martin



IT IS WONDERFUL TO SEE SO MANY familiar faces from near and far. I appreciate that the organizers of this event have provided a day of San Francisco weather. I am delighted to join you this Alumni Day. It is a great honor to be invited to the deanship at Harvard Medical School.

The legacy of a great institution is its alumni. Entry to HMS acknowledges major accomplishments and graduation promises success. You as alumni form an international network of distinguished men and women—some 8,400 in total, I am told.

I value greatly the resources you bring and regard our partnership as a two-way obligation: first, for me to keep you informed of the changes at HMS, and second, for you to keep me informed of your experiences and to remind us here of our obligations to prepare the best graduates possible.

It is particularly intimidating to follow Daniel Tosteson, whose 20-year tenure as dean is virtually unparalleled, both with respect to duration and accomplishment. I admire you, Dan, for your leadership and want to thank you for making this period of transition so seamless. One does not try to fill the shoes of a great person—instead, one attempts to build upon the great initiatives that he has put into place.

If I may, I should like to reflect for a few minutes on some of the current issues that we physicians and other health care professionals face.

I must confess to you at the outset a life-long predilection to optimism and cheerfulness. These weaknesses are no doubt accentuated by my belief that medicine and other careers in the health professions remain the best and most noble of all professions. These beliefs have sustained me throughout difficult times, and provided me with an enduring confidence that the future holds even more promise than the past.

Unfortunately, the profession as a whole has had some withering of self-esteem in recent years. Our patients

ask more questions and insist on better explanations of the actions and side effects of the drugs they are prescribed. There are more constraints on the choices that can be made in delin- eating a career in medicine. And there is always concern about making mis- takes in the practice of medicine. Yet even with these limitations, our pro- fession provides many of the richest experiences possible.

Many have described the second half of the twentieth century as the biological revolution. The sixteenth and seventeenth centuries witnessed the renaissance in painting and sculp- ture; the eighteenth century, the emer- gence of the genius of music; the nineteenth century, the industrial rev- olution; and the first half of the twen- tieth century, the era of physics and chemistry. Now as we close out the twentieth century, we can only look back in awe at the accomplishments in cell biology, genetics, and in the clini- cal advances in new treatments. This is the century that will be remembered for the atom, the computer and the gene.

It is ironic, in a way, to consider that 50 years ago toward the close of the first half of this century, physicists were perfecting the means for us to destroy ourselves with the atomic bomb; now toward the close of the second half of the century, we are on the brink of being able to change humankind. Genetic engineering in the next century will have as great a potential for good or evil as atomic energy did in our time. We, as physi- cians, need to stand guard over these advances and be disciplined in our attention to the Hippocratic oath “to do no harm.”

The contradictions of our society are quite profound. On the one hand, we are witnessing the most remarkable emergence of new biology—the era of molecules, gene therapy, rational drug design, and new understandings of the genetic nature of our makeup; we are beginning to unravel the very nature of the brain and mind. On the other

hand, we find a society removed from, and in large part ignorant of or indif- ferent to, these implications.

We face a remarkable degree of rejection of the rational, the scientific. There exists an enormous dichotomy between the greatest era of biology and growing dissatisfaction on the part of many that little of what science and medicine are about is relevant to soci- etal or personal needs.

I will not comment now on the impacts of the health care revolution, but I do believe that the pendulum has swung as far as it will. Patients are now beginning to complain about the over- emphasis on price control when qual- ity is at stake. Legislators are beginning to reign in the HMOs that offer less than they promise. Patients are also complaining that they cannot see the physician of their choice or be referred to the best expert for consul- tation regarding their illness.

In searching for a famous quotation it is not unusual to refer to Winston Churchill, Mark Twain or Yogi Berra. But for today, I want to quote Dwight D. Eisenhower: “Things are more like they are now than they have ever been before.”

We are in the midst of extraordi- nary scientific progress. But science applied to medical practice without an equal portion of heart and soul is mis- directed.

To accept the deanship of Harvard Medical School is an enormous and formidable undertaking. I feel ener- gized by the challenge and am eager to embark on this great adventure. With your help, advice and counsel, we will move forward together. ❧

Joseph B. Martin, MD, PhD is the new dean of Harvard Medical School and the Caroline Shields Walker Professor of Neurobiology and Clinical Neuroscience.

Reunion Reports



Eben Alexander '39 talks to the dean; inset: mini-reunion of the Class of '39.

60TH

Reunion photos by Richard Wood Studio



EIGHTEEN CLASSMATES CAME TO THE Quadrangle for the Alumni Day exercises and had a picture taken with a number of wives on that cool bright June day. Three came from the West

Coast and one from Hawaii. Our evening dinner at the Harvard Club in the Aesculapian Room seemed to drop the years and create some of the old spirit. Arnold Relman held forth in his

realistic manner about medical practice, managed care and insurance entitlements, and made it a memorable evening.

We met on Saturday morning with the attractive librarian at Countway. She explained the new medical information pathways and how the 81,000 monthly pounds of medical journals are handled. We looked at some of the old books that the Boston Medical Library has now kept at Countway. We then went to Vanderbilt for a pleasant student string-quartet concert and a lunch that was far superior to any we remembered in 1937.

At least one of our members is looking ahead, as he brought his fiancée with him. We all wished Henry Work many happy years with her!

Albert C. England Jr. '37

55TH



THE GATHERING OF THE CLAN, ON the occasion of our 55th reunion, proved to be a tremendous success both in attendance and in renewed enthusiasm for the 60th reunion in five years.

The activities during alumni week began rather informally on Thursday with a parade of the reunion classes from the college and the graduate schools into the Tercentenary Theatre where the usual festivities, introductions and commentaries were made.

The afternoon proved to be a great success, particularly the comment of the Alumni Association of the university pertinent to the problems facing medicine today. Secretary of State Madeline Albright delivered the main address, which was superb—crisp, informative and stimulating. The alumni then marched out of the Tercentenary Theatre to begin the separate functions throughout the university.

The Class of 1942 then met for our

first formal occasion, joining 44 classmates, wives and widows at the St. Botolph's Club, where arrangement for a superb dinner had been made by Oley Paul. After an evening of cheerful, amusing and nostalgic commentaries, we eventually retired to meet again on the morning of June 6 on the Quadrangle of the medical school for the traditional Alumni Day program, with formal speeches and many informal commentaries from alumni and alumnae of all classes.

After the luncheon under the tents, we gathered again late in the afternoon at the house of Bill McDermott in Dedham for a clambake, open bar and more festivities. Fortunately, although tents were provided, the weather was superb and we could eat with visions of the marsh adjoining the river, the pool adjacent to the house, and a section of the Charles River.

We eventually separated, and the "Captains and the Kings departed" with firm resolutions to meet again en masse in five years.

There is always a note of sadness at these reunions, as we reminisced about

50TH



HMS '47 COLLECTIVELY KNOWS HOW to make a reunion a "happy observance." No need for props or passive entertainment—just a gathering place—we do the rest. The bonding that developed in the BOQ atmosphere of Vanderbilt Hall remains, despite the passage of years. Bob Brockhurst's photo slides of us, as we were, provided form and flavor; Zufall's ode captured the spirit. And to those uncommonly attractive, later additions to this group dynamic, the wives, our gratitude for their gracious and lively presence.

The school, as usual, produced a first-rate program of seminars and traditional congregate events on the Quadrangle. It was a fortuitous privilege to be present at the passing of the deanship from Dan Tosteson to Joe Martin. Remarkable progress in school organization and curriculum made under Dan's leadership has made us all proud of our HMS connection.

How appropriate that the morning symposium not only addressed the matter of aging but was so optimistic regarding longevity.

The news about longevity, however, did not deter us from parting with our money at this now early age. The 50th class gift—some \$500,000 and change—is \$200,000 more than the goal, and the highest in the school's history. Everyone can take pride in this; but special credit goes to

the gentle persistence of John Duggan, who not only chaired the reunion committee but also organized and managed the fund drive. He promises to be available with condolences to anyone who outlives his money supply. And John Shea got rave reviews for his thespian skills, demonstrated at the financial and estate planning seminar, where the mutual benefits—to donor and to school—of planned giving were explained.

As to matters of health, everyone expressed pleasure at how well everyone else looks. Such might be regarded as idle flattery; or reflective of a subconscious comparison with what we, at our 25th, judged to be the seedy appearance of the members of the Class of '22! There was and is, however, much truth in it. Granted, the number of hearing aids in the group is significantly large (and probably should be larger), the hair loss striking, more porcelain flashing. But there is little increase in girth and very few obvious impairments. And there remains a remarkable vitality, physical and mental, making for great conversation and confirming what was published in the 50th reunion report.

In that regard, kudos to Nat Brackett for his "pains-taking" work extracting the information from procrastinating classmates and formatting it for timely publication. The questionnaire was well designed, and produced substantive and thought-provoking responses.

Cheves Smythe did a summary of the answers and presented it at the Thursday evening dinner at the Bay Club. His entertaining persona drew my attention away from some of the details. However, he sent me his notes from which I have extracted what follows. The general theme is that we remain strong advocates for the medical profession and consider service to be our important mission, despite the corporatization of medical practice, retirement, etc. As to specifics, the teachers we repeatedly mentioned as

departed classmates and recalled our early years together, but all in all, it was a cheerful, active, pleasant and amusing occasion.

Keep in touch with us by reports to Oley Paul for publication in the *Alumni Bulletin*. Happy days!

William V. McDermott Jr. '42,
chairman

Ogelsby Paul '42

Charles Round '42

Robert Tracy '42



Frank MacMurray and
Jack Lucas, Vanderbilt
Hall, 1943

most influential are Green, Landers, Enders, Castle, Albright and Aub, principally for their character, their breadth, insight and humanness—the “embodiment of the value system of the medical school.” We have 380 children and 560 grandchildren, of whom 65 are “in medicine”; of the 76 who claim to be retired, 27 are still active professionally; 25 are still working. The replies further noted our involvement in a wide array of interesting activities, a fondness for Medicare, but not so much for Medicaid; some support for a single-payer system, but none for managed care, which, he editorialized, surprised him.

The gathering at the Bay Club Thursday evening provided not only a spectacular view of Boston, but also a most favorable view, albeit somewhat limited by circumstances, of the new dean. We certainly wish him well. The retiring dean also graced us with his presence, and we were able to accord him in a more direct and personal manner our grateful recognition for his many contributions in office.

Myron Sandifer, presiding with his special brand of wit and genteel humor, managed to produce even more entertaining encores at the subsequent dinners at Ocean Edge. His Friday night dissertation on “elements,” accompanied by slides, was a classic and should be enshrined in the class archives; not to mention his confession that sponsorship of his Saturday afternoon golf exhibition by the makers of Sinemet was withdrawn due to his performance. Or was it lack of a gallery?

Ocean Edge provided excellent facilities. Several of us played golf on its challenging course. In one four-some, Charlie Greenhouse bested Macausland, Smythe and me with a creditable score in the mid-eighties. Jim Johnston organized a tennis tournament played on first-rate courts on the ocean side. And there were the amenities of the outer Cape: its

unique ambiance, the Audubon sanctuary in nearby Orleans, the charm of Provincetown, left relatively uncluttered by the concurrent celebration of Gay Pride Week in Boston. But a comfortable, quiet, and convenient central gathering place there was not. Surely there must be a remedy for the impediments to socializing created by crowded dining rooms with background noise in the 100-decibel range. Most everyone left on Sunday with the feeling that despite having had a great vacation they still had some reunioning to do. So, onto the next; in fact, some of the California delegation suggested we have an interval get-together in California in two years.

How about that! Candlestick Park?

This report cannot conclude without acknowledging in a special way the excellent planning done by Nora Necessian and Dee Masiello of the Alumni Office, the effective efforts of Jim Shannon, treasurer, and the help of the Reunion Committee: the class is most grateful. Also, we note with sadness the absence of deceased classmates, many of whom we remember as so lively and well at previous reunions, and offer again Cheves’ toast “to absent friends.”

William Porell '47

47 + 50 = 97

In Boston, Mass. have fifty summers passed
And fifty winters have snowed upon our pates
Since we assembled on the hallowed grass
of Harvard Yard to get our doctorates.

Again the warmth of old dear friends we feel,
Companions of those tense and trying years
That made us doctors who went out to heal,
To teach, to search, to rise among our peers.

Tonight we join our mates to contemplate
Each other's lives, and how we are and do,
How close, in different ways, we came to “great,”
And how in our journeys we've enjoyed the view.

But let us now remember those who've gone,
Friends of our years who've gone where the good doctors go.
Bright in our memories they will live on;
We share the sorrow that their loved ones know.

Then raise a glass to the class, still forward turning.
Much have we done, and much have we come to know.
As Bobby Green said, “Grow old always learning.”
Laurels are not to rest on but to grow.

by Robert Zufall '47

45TH



WE MISSED ALL OF YOU WHO couldn't (we know most of you wanted to) come. Weather and old friends conjoined to make it very worthwhile. Thanks to John Constable and his wife Silvia, on Thursday night we had a great and convivial cocktails and dinner

once again on Beacon Hill at the Club of Odd Volumes, crowding in 80 or so. Under the superb direction of Dan Federman as master of ceremonies, Dan Tosteson retired on Alumni Day, with a nice coming-on-board speech by Joe Martin to finish off.

Too few of us (45 or so) then went to Weekapaug Inn on the Rhode Island shore. For those of you who didn't come, you missed something! We had the glorious setting and superb food all to ourselves, where we could visit, sit in front of a fire in the evening, sing along with Barbara Fornshell on the piano, play tennis, croquet or golf—even fish. We even had Debbie Senft with us. It was perfect. Maybe next time, for all of you hold-outs?

John Reichard did such a good job with our 45th reunion report that we will have to nail him again for our 50th. And, speaking of 50th, you will all be hearing more from us for not only commitments of your personal presence but financial as well. So get your excuses ready!

Will Cochran '52

40TH



THE WEEKEND BEGAN THURSDAY night, with 101 of us converging on the storied Algonquin Club in Boston. There, old friendships were renewed in the cavernous oak-paneled lounge, under the austere gaze of Brahmins long dead.

Bucky O'Connor welcomed those present and read a brief statement from our class agent, Al Crum. Al

praised our past generosity and urged that the habit continue. (This called to mind the puckish definition of Gratitude as "a lively sense of favors yet to come.")

On Friday morning a substantially smaller number braved the rigors of the "cryobiology laboratory" known as the Longwood Quadrangle, to hear the 50-year "Tale of Two Diseases."

(A third appropriate medical condition, frostbite, received no mention). But 61 of the class and spouses turned up for the reunion photograph.

Seventy-two members of the class and spouses next met at the Stage Neck Inn in York Beach, Maine—scene of an earlier reunion. It was well worth the long drive. Cocktails and dinner against the background of a spectacular sunset continued the social momentum. At dinner's end our unofficial class member, robotic "Doctor Max" (a.k.a. Harry Senger), made a cameo appearance to update us on his prognostications for medicine. One displayed slogan: Doctor Max Does It All! If I Don't Do It, You Don't Need It.

"Lonesome Hank" Onken followed the ballad by folk singer Pete Nelson, with the refrain: "Everyone I know has a story to tell/ When you get to be our age, it's what we know best./ Next time I see you, let's talk about failures, / You buy the first round and I'll buy

35TH



THE CLASS OF 1962 CELEBRATED their 35th reunion with a total of 41 classmates returning to the Quadrangle and subsequent festivities. Our reunion started on Wednesday evening and despite the chilly Boston weather, about 60 classmates, wives

and one small child gathered at my home in Chestnut Hill for an informal reception. The ambiance was terrific and it appeared that nobody has changed to the point where name tags were truly necessary.

Following the scientific symposia,

we dined and danced at the Courtyard Cafe on Thursday evening. Following class exercises and photographs on Friday, approximately 40 of the group "retired" to the Cliff House in Ogunquit, Maine for an informal and very fun weekend. This was highlighted by a clambake on Saturday evening that fortunately was held indoors since the weather continued to be on the cool side. The highlight of the evening was no speeches and a few jokes from Bill Donahue. The most popular member of the reunion was Bernice Beasley, Palmer's eight-year-old, who won the hearts of everybody and kept everyone on their toes.

We hope everyone will read the red book from cover to cover and ignore the one person who is not a member of our class in it. Perhaps this will also inspire you to come back to what we think will be a great 40th reunion in five years. This is another challenge to our antisocial classmates; hopefully at their advanced ages they will have a change of heart (old dogs, new tricks).

Samuel H. Kim '62

the next."

Perhaps the high point of the weekend was the informal Saturday morning forum: Medicine—a Forty Year Perspective, presided over by Bucky O'Connor. He began by reminding us that "Not all change is progress." In the course of discussion Ralph Engle commented, "Without confidentiality we don't have a profession." Several remarked about the optimism and enthusiasm of medical students and young physicians in the face of menacing social and economic developments.

A clambake on Saturday served as the final social event. At its end, Art McFee offered a resolution that we return to Stage Neck Inn for the 45th reunion, evoking thunderous applause. The mix of table seatings over five meals (including two breakfasts) threw old friends together in new combinations, reaffirming the convivial spirit of the class. Sunday saw us scatter to our accustomed haunts, warm memories abiding.

Peter M. Yurchak '57

circa 1962



30TH



THE 30TH REUNION CLASS OF 1967 had a really fine turnout. Several members of the class who had not previously attended reunion activities joined us. On Thursday night we had a cocktail party in Vanderbilt Hall and all got reacquainted. Following Alumni Day activities on Friday we

held our traditional dinner at the Tavern Club in the center of Boston.

In addition to our usual opportunity to share experiences, both professional and personal, we enjoyed the company of Dr. and Mrs. Joseph Gardella, Dr. and Mrs. George "Eric" Erickson and Mrs. Clifford Barger.

Many classmates expressed the desire to keep future Friday night dinners in the same informal format that has been developed over the past 30 years. It encourages us to renew relationships that are clearly very poignant and heartfelt.

On Saturday there was a clambake at the Shulman's with an impressive presence of very young progeny from our prolific class!

This successful weekend concluded with an obvious consensus that we should take advantage of opportunities in the future to see each other and to stay in contact. It is abundantly clear that the relationships formed during medical school have been an enduring force and strength in the lives of the alumni/alumnae of the HMS Class of 1967.

Richard Shulman '67

25TH



HMS '72 HAD AN EXCELLENT TURNOUT with more than 65 classmates returning for various parts of the two and a half day reunion celebrations. Some of the professional rank only had to cross the street to attend while Onesmo Ole MoiYoi traveled from Kenyatta University in Nairobi.

Class activities began on Wednesday evening with a reception

in the large atrium of the former Mass. College of Art, now the Shapiro Clinical Center of Beth Israel Deaconess Medical Center. After adjusting for changes in length, color and density of hair, classmates were quite recognizable.

Our big day began on Thursday with the symposium organized by Peter Weller, Peter Howley, Steve

Galli and Bill Chin. The theme was "Lives of ..." First covered were Lives of Pathogens and the quests to find and define them. Onesmo Ole MoiYoi described his research in mapping the genome of theileria, a protozoan parasite with a life cycle similar to malaria, which causes major mortality in cattle by inducing an acute leukemia-like transformation of lymphoid cells.

Matiya Peterlin, professor of medicine at UCSF, gave a beautifully illustrated talk describing several novel proteins he has isolated in the course of his AIDS research.

Steve Arnon from the California Department of Health described the travails and triumphs in developing botulism immune globulin treatment for infant botulism syndrome. In the course of events, he immunized himself against botulism, dealt with the FDA under an orphan drug protocol, and negotiated with the Armed Forces Biological Weapons bureaucracy. The recent FDA approval of BIG is his suc-

cess story.

Roger Glass, now at CDC, reviewed the epidemiology of rotovirus and his work developing an effective vaccine against this worldwide enteric pathogen.

Our focus switched to "Lives in Medicine." Ed Benz took temporary leave of his sacrosanct chair as Sir William Osler Professor of Medicine at JHU to share with us cultural and tribal rituals at other institutions. He touched on haberdashery as well as departmental organization in the modern era of managed care in academic medicine. We at HMS were amused.

Rex Cowdry, deputy director of the National Institute of Mental Health, gave a humorous (in retrospect) but serious account of defending the institute's research budget from attacks instigated by the Church of Scientology. The church has mounted a campaign against psychiatric and behavioral research. Not only did Rex have to face the U.S. Senate and House committees on research, but he had to sit face to face with Sam Donaldson on live TV. Rex survived, as did his budget.

The afternoon program dealt with interesting career and avocational journeys. Lew Clayman, professor and chairman of the Department of Dentistry and Oral and Maxillofacial Surgery at the University of Detroit, related the personal and professional joys of volunteer work in Nepal as well as the frustrations of dealing with local politics in trying to set up an enduring clinic in Nepal. Bob Hodge, a health care consultant as well as associate professor of medicine at UVA, has spent much of his professional career building consensus in organizations, community-based health care as well as supplying information technology to primary care medicine.

Doug Kelling gave us insight into the work of a busy country doctor taking care of patients, educating ignorant young MBAs from managed care, and developing practice management

protocols to ensure the best care and monitoring of his patients' health. Andy Garling recounted his journey from HMS via the Kennedy School through Costa Rica to Kaiser Health Plan, where his interest in managed care was sparked. He subsequently obtained an MBA and worked for Prudential. His pursuits have been in keeping with Herman Lisco's admonition to "Do a good piece of work." He has returned to Boston as medical director for a managed contracts company.

Thursday evening Deans Tosteson, Martin, Federman and Gardella joined us for dinner in the Medical Education Center. We had a lively reception with various and sundry study groups, anatomy groups, and second-year show acts reuniting for photographs. The sun and moon set before the last of the Class of 1972 was ready to leave.

Alumni Day was bright and cold. Ned Cabot and Steve Lipson had the honor of presenting the first class endowed scholarship at HMS, the HMS '72 Scholarship. Interest from our endowment will help support one student. We can add future class gifts to augment our fund.

Pat Come and Carl Nathan were

featured speakers on Alumni Day.

Dean Tosteson passed the torch to the new dean of HMS, Joseph Martin. We dutifully posed for class photos but, of course, HMS '72 had to have a renegade silly picture as well as the sedate standard issue.

Our final event was dinner at the downtown Harvard Club. It didn't rain. The view was spectacular in all directions. Jeff Drazen and Steve Galli arrived in full Eagle Scout uniform, fresh from inductions. The room sang variations to Schubert lieder. Variations, indeed! To the music of *Das Wandern*, we heard a recap of the preclinical years. What fun it is to laugh and sing at HMS! We heard a gallant intern's early afternoon easy workup—Mrs. Isabel Balesar Galloope. With that, the evening ended in tears ... of laughter.

The Class of 1972 is varied, talented, independent-minded, impressive, interesting and a wonderful group of individuals. I look forward to our next reunion when we won't have to work so hard giving a symposium and can spend more time just enjoying one another. Yes, we will plan on a weekend. Save the dates: June 6-8, 2002.

Ann M. Bajart '72

circa 1972



20TH



ABOUT 40 ALUMNI ATTENDED THE reunion festivities for the Class of '77. The weekend began with a cocktail party at the Newton home of Dori Zaleznik, where we got a chance to get reacquainted. It seemed as if some of

us just picked up conversations where they had left off when we last met in 1972. The two most common topics of discussion seemed to be how recent changes in health care delivery have affected us, and whose appearance has

changed the least/most since we last saw him/her.

While only a few of us gathered on the Quad on Friday for the Alumni Day activities and photograph, we had the greatest turnout for dinner that evening at the Loeb House in Harvard Yard. The elegant meal was matched with a mixture of reminiscences, stories of jobs, families and hobbies, and hopes and plans for the future.

Saturday afternoon we met at the lakeside home of Bob Taylor, for picnicking, boating and more schmoozing. Kids from toddlers to college age joined in the fun, despite the cool, overcast weather.

We look eagerly forward to 2002, when our 25th reunion class will serve as hosts for the week's festivities.

Gilbert Brodsky '77

15TH



MEMBERS OF THE HMS CLASS OF 1982 came together for a great reunion week. Many of the class took advantage of the well-received scientific program on the Quadrangle. The social events offered many opportunities to renew acquaintances and trade managed care horror stories.

Forty-five classmates and spouses were hosted at a reception at the home of Steve and Patty Sweriduk. (Most) everyone enjoyed the opportunity of

"re-indulging" the gastronomical tastes of their HMS days—Middle Eastern fare.

On Friday evening, the group gathered at the Bay Tower Room where all were awed by the breathtaking panorama, succulent salmon and filet, and rude service. The highlights of the evening were a quasi-impromptu roast of Pete DiBattiste and a soul-baring, albeit humorous, revelation of the burning down of the rented ski cabin

during the winter of 1979.

On Saturday the kids outnumbered the adults at a picnic on the banks of the Charles. Face painting, balloon animal construction, and whiffle ball were the major activities of the afternoon, before the local classmates piled their kids into minivans for soccer and little league baseball games.

All in all, a very successful reunion. All look forward to an even bigger bash at the twentieth in five more years.

DeWayne Pursley '82

IOTH



AS CHAIR OF THE 10TH YEAR REUNION committee, I have the authority to claim our reunion was a huge success! Despite the low showing at the Friday afternoon photo session, our class showed up in healthy numbers to imbibe and enjoy each other's company both Friday evening and Saturday afternoon. As noted by the "official" reunion photo, the number of kids produced by the class equals the number of class members who returned, a perfect example of zero population growth.

Friday evening went splendidly. Vince Cryns enjoyed his first and last meal at the St. Botolph's Club in the midst of moving to Chicago—we hope he found a house by this printing. Rick Locke made a rare token appearance, claiming he and Jean changed in the cab ride over from Logan. Rob Glassman and Brandon Fradd shared investment strategies. F.X. Campion looked appropriately sleep deprived (!) given the recent birth of his son, Gregory. Debbie Jacobs, on the other hand, looked nicely rested despite becoming an instant aunt that evening to twin nephews! Anne Marie Gorczyka (HSDM) claimed to have a gold flute in her car, but respectfully declined to entertain us despite her assertions about its rich timbre.

All the rest of us old fogies settled down to a nice meal, swapping war, I mean, work stories. We enclose a more representative photo of our class from that evening (reprint requests can be sent to Kalon Ho).

The "HMS 10th year reunion pavilion" addition to our house was ready just in time Saturday afternoon. The amusing part is that everyone spent the time outside despite the cool weather—still, a few gushed appropriately! As many kids as parents arrived to enjoy the clambake, and the caterers mentioned that there wasn't a bad-looking kid among the crowd! With her mind on wedding preparations, Debbie Jacobs made sure the caterers were present with plenty of time to spare. (Our best to Debbie and Pete!) The weather was less than ideal for swimming, but since nobody told the kids (and the pool was heated), only the parents looked cold and fondly at those of us who were smart enough to make the other spouse swim. Of course, true to New England weather, the days since the reunion party have been perfect for swimming.

We were sorry to hear Tim Koritz was unable to make it. He wins the award for "last minute decisions" and his prize is a day/date planner. My son, Bill, swears he saw Tim flying with the

Thunderbirds! Bettina Vaello was the winner for arriving with the most "in tow," expecting her third child in September 1997. She wins a coupon for a case of diapers. Nancy Jasso wins the award for coming the farthest away (Santa Monica). She wins a pair of American Airlines plastic wings. Rick Born wins the award for eating the most lobsters (3), just in case those of you who paid but didn't come wondered what happened to your food. Rick doesn't get an award since he walked off with an additional two lobsters!

I thought I had received the best prize when Chris O'Donnell left both a fisherman's knit sweater and a bathing suit (quite the combo). However, he called to retrieve them, claiming he left in such a rush due to a private showing of *Batman and Robin*, where he reportedly debuts as Robin! I am left with a boy's blue bathing suit (youth L), a red MGH neuro sweatshirt (adult M), one child's white sock, and a little girl's rhinestone party ring. After 30 days all unclaimed articles will be donated to the alumni office!

A special thanks to all the spouses who put up with the craziness of the day. It really was fun to see each other and our families and to catch up, if briefly. We missed those of you who were unable to make it—hope to see you at the next one!

Many thanks to the reunion committee for putting together a nice combination of events, if I do say so myself. Kalon Ho did a superb job of keeping us on budget, or at least not letting us know otherwise. For those interested, I did remain married following the reunion and celebrated my 10th wedding anniversary, despite not recognizing the mini floral replica of our altar arrangement! Given the number of us who have remained in the Boston area, we should try to have another get together soon, perhaps before our 15th reunion.

Eliza W. Menninger '87

